STATE OF MINNESOTA DISTRICT COURT

COUNTY OF RAMSEY SECOND JUDICIAL DISTRICT

- - - - - - - - - - - - - - - - - - - -

The State of Minnesota,
by Hubert H. Humphrey, III,
its attorney general,
and
Blue Cross and Blue Shield
of Minnesota,

Plaintiffs,

vs. File No. C1-94-8565

Philip Morris Incorporated, R.J.
Reynolds Tobacco Company, Brown
& Williamson Tobacco Corporation,
B.A.T. Industries P.L.C., Lorillard
Tobacco Company, The American
Tobacco Company, Liggett Group, Inc.,
The Council for Tobacco Research-U.S.A.,
Inc., and The Tobacco Institute, Inc.,

Defendants.

- - - - - - - - - - - - - - - - - - - -

DEPOSITION OF COLIN C. GREIG

Volume II, Pages 243 - 437

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

(The following is the continued deposition of COLIN C. GREIG, taken pursuant to Notice of Taking Deposition, at the offices of Lovell White Durrant, 65 Holborn Viaduct, London, England, commencing at approximately 8:43 o'clock a.m., July 29, 1997.)

APPEARANCES:

On Behalf of the Plaintiffs:

Martha K. Wivell and Vincent J. Moccio
Robins, Kaplan, Miller & Ciresi LLP
Attorneys at Law
2800 LaSalle Plaza
800 LaSalle Avenue
Minneapolis, Minnesota 55402

On Behalf of Philip Morris Incorporated:

Richard H. Burton
Hunton & Williams
Riverfront Plaza, East Tower
951 East Byrd Street
Richmond, Virginia 23219-4074
New York, New York 10017

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Internet Archive in 2014 http://www.industrydocuments.ucsf.edu/docs/lhxd0001

On Behalf of BATCO and BATUKE:

Bruce G. Sheffler and Gregory M. Loss

Chadbourne & Parke LLP

Attorneys at Law

30 Rockefeller Plaza

New York, New York 10112

Byron E. Starns

Leonard, Street & Deinard

Attorneys at Law

30 East 7th Street, Suite 2270

St. Paul, Minnesota 55101

On Behalf of Lorillard Tobacco Company:

Ruth Sheret

Shook, Hardy & Bacon

Attorneys at Law

One Kansas City Place

1200 Main Street

Kansas City, Missouri 64105

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

On Behalf of Brown & Williamson Tobacco Corporation:

Michelle H. Browdy
Kirkland & Ellis
Attorneys at Law
200 East Randolph Drive
Chicago, Illinois 60601

ALSO PRESENT:

John Meltzer, Raid Abu Manneh,
Dr. Kim Davis, Caroline M. P. Moore
and Donna Lambert
Lovell White Durrant
65 Holburn Viaduct
London EC1A 2DY, England

Judge Fitzpatrick (via teleconferencing)

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Tobacco Documents Library
http://legacy.tobaccodocuments.ucsf.edu/docs/lhxd0001

I N D E X

EXHIBITS		DESCRIPTION	PAGE MARKED
Plfs' Ex	550	"NOTES OF A MEETING OF THE TOBACCO COMPANY RESEARCH DIRECTORS," 16 February 1983, Bates 109840698-702	271
	551	Memo dated 17 January, 1984, Thornton to list, Bates 101432043	276
	552	"A TENTATIVE HYPOTHESIS ON NICOTINE ADDICTION," Bates 536480912-4	293
	553	Memo dated 17th July, 1975, Ayres to Green, Bates 105392360-8	303
	554	Handwritten memo dated 28.1.85, Greig to Creighton, Bates 102969207-9	320
	555	"JOINT R&D/MARKETING MEETING, 24TH-25TH MAY, 1979," Bates 103152115-8	343
	556	"BCAC BRAZIL 1983, RESEARCH AND DEVELOPMENT: INNOVATION AND PRIORITIES OVER THE NEXT FIVE YEARS," Bates 109968084-8	349

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

557	"LOW RETENTION, Project LODOS (low does)," Bates 101357004-10	355
558	"LOW RETENTION," Bates 100502694-701	364
559	Category II document	
560	"Effect of circumference reduction on biological activity, Meeting 20th February, 1987," Bates 400263537-9	369
561	"Note for Dr. L.C.F. Blackman and Dr. R.E. Thornton, Paper by Pryor, Hales, Premovic and Church, Science, 220, 23.4.83," Bates 100508569-70	380
562	"REPORT ON VISIT TO U.S.A. AND CANADA, 19th-31st OCTOBER 1980," Bates 103468347-63	389
563	"POSITION PAPER, TOBACCO SPECIFIC NITROSAMINES, OPTIONS FOR REDUCTIONS," Bates 101400616-22	397
564	Memo dated 18 December 1991, Bates 400488631-58	404
565	"DISCUSSIONS ON 'NO TAR LOW TAR'	

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

		PRODUCTS," Bates 100288981-3	409
	566	Category II document	
	567	Category II document	
	568	"A REVIEW OF THE FACTORS INFLUENCING NICOTINE/TAR RATIO IN MAINSTREAM SMOKE, REPORT NO. RD.2077-RESTRICTED," Bates 400493381-96	423
	569	"NICOTINE ADDITION TO SMOKE FROM FILTERS," Bates 570350969-82	428
	570	Letter dated 7th May, 1985, Baker to Lui, Bates 100516676	432
	571	Category II document	

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

P R O C E E D I N G S

(Witness previously sworn.)

COLIN C. GREIG

called as a witness, being previously sworn, was examined and testified as follows:

ADVERSE EXAMINATION (cont'd)

BY MS. WIVELL:

Q. Sir, you have in front of you Exhibit 328; right?

A. I have something labeled 328, which also contains a number 100503495.

Q. Would you turn to the page Bates numbered 495.

A. 495 is --

Q. I'm sorry, 497. I beg your pardon.

At 497, do you see a heading in this document entitled "The future?"

A. I do --

Q. Now --

A. -- see that heading, yes.

Q. I beg your pardon.

There you say, "Thus we have an emerging picture of a fast, highly pharmacologically effective and cheap 'drug', tobacco, which also confers flavour and manual and oral satisfaction to the user;" right?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MR. SHEFFLER: Just note for the record that the word "drug" is in quotations.

(Telephone rings.)

MS. WIVELL: Let's go off the record.

THE REPORTER: Off the record, please.

(Discussion off the record.)

BY MS. WIVELL:

Q. Now sir, yesterday you --

MR. SHEFFLER: Excuse me, counsel, there wasn't an answer to the previous question.

MS. WIVELL: I'm sorry. Let me re-ask the question.

Q. And there you say, "Thus we have an emerging picture of a fast, highly pharmacologically effective and cheap 'drug', tobacco, which also confers flavour and manual and oral satisfaction to the user;" right?

MR. SHEFFLER: Just for the record, note that the word "drug" is in quotations.

A. That is what is written there, yes.

Q. Now sir, yesterday in one of your answers you said you really didn't feel pharmacology was in your area of professional experience; right?

A. That's not my field of study. I'm by training a chemist.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. All right. But that doesn't --

You didn't mean to suggest to the ladies and gentlemen of the jury that you don't have knowledge of the pharmacology of nicotine.

MR. SHEFFLER: Object to the form of the question.

A. As I am aware, and I am by training a chemist, nicotine is to a degree pharmacologically active.

Q. Well sir, didn't you -- I'm sorry. Strike that.

You have also been involved in conferences where the subject of the pharmacology of nicotine was discussed; haven't you?

MR. SHEFFLER: Object to the form.

A. Could I refer back to the paper which was, I think, somewhere in September of last year -- of last -- whenever it was.

Q. Well let me ask you this: Do you remember being at conferences where the subject of the pharmacology of nicotine was discussed?

A. As far as I am able to recall, the pharmacology of nicotine was mentioned as a minor part of the discussion.

Q. At the conference that was held in -- in Southampton in September of 1985; right?

A. Could I please see this exhibit that you have

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

there?
Q. I -- I don't have the exhibit in front of me, sir, so I'm just asking you if you --
A. Could I see what -- what you're reading from then?
Q. I'm asking for an answer to my question, sir.
Now do you recall at the meeting that was held in Southampton in September of nineteen ninety -- or '85 that the subject of the pharmacology of nicotine was discussed?
MR. SHEFFLER: Objection to the form.
A. I do remember that the question of the optically active forms of nicotine and their potential was discussed.
Q. By "optically active," what do you mean?
A. "Optically active," as defined in a chemical sense, relates to the ability of a chiral molecule, that is one which contains an asymmetric center, to rotate the plane of plane-polarized light either to the left or the right.
Q. Nicotine is such a molecule; isn't it?
MR. SHEFFLER: Object to the form.
A. Nicotine is a molecule which contains a symmetric center -- or an asymmetric center, and thusly can exist in one of two optically isomeric

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

forms.
Q. And the pharmacology of that molecule was discussed at that meeting in Southampton in 1985; right?
MR. SHEFFLER: Objection, asked and answered.
A. As I recall, pharmacology was discussed in relation to the question as to whether the D and the L forms of nicotine would have -- could have different taste characteristics in smoke, and, equally, could have different pharmacological activity.
Q. What do you mean by the D and the L form?
A. Those are conventionally defined in chemistry as the dextro and the levo forms, the dextro meaning to turn this plane-polarized light to the right, and the levo to turn it to the left.
Q. And one of those is monoprotonated and one of those is diprotonated; correct?
A. No, this is more an intrinsic property of the molecule before any protonation would occur.
The presence of the asymmetric center in the molecule will lead to the D and the L forms, and then those D and the L forms can themselves become protonated.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Now sir, you have also written about the pharmacology of nicotine; haven't you?
A. I'm unable to recall that I have so done in any detail.
(Discussion off the stenographic record.)
Q. But you have written about the subject; correct?
MR. SHEFFLER: Objection, asked and answered.
A. I think I have already answered that question.
Q. Well you said you are unable to recall having done so in any detail. Does that mean that you didn't write about it in any detail, or you just can't recall?
A. It means that if I have written about it, it will certainly be in no detail. I am not by training a pharmacologist; by training a chemist.
MS. WIVELL: Could we have Exhibit 538.
THE REPORTER: Off the record, please.
(Discussion off the record.)
BY MS. WIVELL:
Q. Sir, showing you what's been marked as Exhibit 538, this is a document that you wrote; right?
A. Yes, I recognize it as a document that I wrote.
Q. Now the document was written because, at a

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

research conference in Montebello in 1982, questions had been raised regarding the constituent of -- the constitution of cigarette smoke; right?

MR. SHEFFLER: I believe you left out the word "nascent." Is that now you say that?

THE WITNESS: "Nascent," yes.

Q. Do you have my question in mind, sir?

A. I have your question in mind, yes.

Q. All right. Let me re-ask it.

Now the document was written because, at a research conference in Montebello in 1982, questions had been raised about the constitution of cigarette smoke; right?

A. I was not present at that conference, and I was informed by a Dr. Ayers that the conference had in fact raised these questions. And he, as I recall, brought back a remit to ask one of his chemists and scientists in Southampton to address that question or those questions.

Q. And you got the assignment; right?

A. I was asked to respond and to take the assignment, yes.

Q. Now did Dr. Ayers tell you what had gone on at that conference in giving you this assignment?

A. It's a long time ago and I don't recall. I

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

don't even know that Dr. Ayers was present at the conference. But the message that was relayed to me is the message in that first sentence, and that I was required as part of my duties to respond.

Q. And you wrote this document in response; right?

A. I wrote this document in response to what I believed to be the brief, yes.

Q. Sir, would you turn to the page that ends with Bates number 786. There is a heading entitled "Physiological consequences;" correct?

MR. SHEFFLER: Objection, this was asked and answered yesterday.

A. Could I take a couple of seconds to --

Q. Certainly.

A. Yes, Section 2, as I read it, states "Physiological consequences."

Q. And you say there, "It is well known that nicotine can be removed from smoke by the lung and transmitted to the brain within seconds of smoke inhalation;" correct?

MR. SHEFFLER: Objection, asked and answered yesterday.

You may answer.

A. I believe that I have nothing to add to my previous answer.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. And then you go on to write, "Since it is the major or sole pharmacologically active agent in smoke, it must be presumed that this is its preferred method of absorption and thus why people inhale smoke;" right?

MR. SHEFFLER: Same objection.

A. That is what is written in the text. And once again, I believe we covered that question, and I don't think I have anything to add to my response of yesterday.

Q. Well my question -- I'm sorry.

At the time that you prepared this document, did you go back and look at the information that was available to BATCO on the pharmacological activity of nicotine?

MR. SHEFFLER: Objection, overbroad.

A. I believe that I discussed the assignment I was given with a number of scientists in Southampton who had areas of specialty, and that is the reference made on the initial page to "which had been discussed." It states here, "This note tries to indicate, for your general interest, the kind of processes which may be occurring and which have been discussed very informally, within GR&DC Southampton."

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

And I am unable to recall precisely who I discussed these areas with, but I would imagine, in the area of the physiological consequences, that I would have discussed this, in brief, with a scientist in Southampton.

Q. Which scientist?

A. I would imagine that and in fact I can recall that the scientist who was most appropriate to discuss matters of pharmacological activity was a Dr. Wilma Templeton.

Q. Now sir, in preparing this document, did you also go back and look at information within BATCO's files concerning the pharmacological effect of nicotine?

MR. SHEFFLER: Objection, asked and answered, and overbroad.

A. I don't remember. Certainly don't recall going back and consulting any documents. I believe the kind of information and the kind of detail that is here was probably more appropriately derived from a -- an informal conversation with a scientist who had training in that particular area, and that the information that she would be able to give me would be accurate.

Q. Well sir, you understood at the time you wrote

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

this document that nicotine was addictive; didn't you?

MR. SHEFFLER: Objection to the form, assumes facts not in evidence.

A. I would ask you to define what is meant by "addictive."

Q. Well sir, you've used that word; haven't you?

A. I may have used the word.

Q. All right. Well since you've used it, let me ask you again: Did you know at the time you wrote this document that cigarette -- that nicotine was addictive?

MR. SHEFFLER: Object on the form, assumes facts not in evidence.

A. I think what one has to do is to define what is regarded as "addictive."

MS. WIVELL: Mr. Stirewalt, could you get out Exhibit 544.

(Exhibit 544 handed to the witness.)

BY MS. WIVELL:

Q. Sir, Exhibit 544 is a document you wrote approximately two months after you wrote Exhibit 538; right?

A. They are so dated, yes.

Q. Now the heading of Exhibit 544 is

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

"Non-combustible aerosol generator;" right?
A. It is so designated.
Q. In other words, this document concerns an attempt to deliver nicotine in a non-cigarette form; right?
A. Can I take a couple seconds to look through this?
All right. Repeat the question, please.
Q. Certainly.
This document covers an attempt to deliver nicotine in a non-cigarette form; right?
A. The proposition was to derive a non-combustible aerosol generator, and I think the operative phrase there is "aerosol," and I've already described aerosols to you.
Q. And the purpose of doing this project was to deliver nicotine without the pyrolysis by-products of burning tobacco; right?
A. In an extreme form, that would be one objective, yes.
Q. And frankly, we're talking about, in the first paragraph, Project ARIEL; right?
MR. SHEFFLER: Object to the form.
A. B.A.T. patented a device which was known as ARIEL. I was referring to the patent, and I try to

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Internet Archive in 2014 http://www.industrydocuments.ucsf.edu/docs/lhxd0001

make sure that the reader is assured that ARIEL was not a non-combustible aerosol generator.

Q. But the first sentence is, "There have been a number of attempts over the years to develop, and possibly then market, a device which offers the consumer a nicotine source without, or with a minimum of tobacco smoke;" right?

A. That is so stated, yes.

Q. And that was one of the purposes of ARIEL; wasn't it?

MR. SHEFFLER: Objection, mischaracterizes. Objection.

A. I have no knowledge of the original purpose of ARIEL. I believe that that work was done before I joined the company.

Q. All right. Well you're referring to ARIEL here, so you would agree you had knowledge about that project; right?

MR. SHEFFLER: Objection, mischaracterization of the document and the witness's testimony.

A. In referring to ARIEL, I referred to one patent of ARIEL by B.A.T., and that's really as much knowledge as I have of ARIEL.

Q. Now sir, if you turn to the third page of the

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

document, you see a heading "STRATEGIC OBJECTIVES."
A. I do.
Q. And there in the second paragraph you pose a question; right?
A. I see that there are at least one question.
Q. And that question --
A. Two.
Q. I'm sorry.
A. I see that there are two question marks in the first two paragraphs of that section labeled "2. STRATEGIC OBJECTIVES."
Q. Move to strike as non-responsive.
My question was: And there in the second paragraph you pose a question; right?
A. Oh, pardon -- pardon me. I do apologize. I had not heard the second paragraph.
Yes.
Q. And that question is, "If we assume that we are not selling smoke - why have a device that looks like a cigarette?" Right?
A. That is what is written there, yes.
Q. And the patent for ARIEL describes a device that looks like a cigarette; right?
A. The patent for ARIEL that I reviewed had the appearance of a cigarette.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Now I'd like to go down to the fourth paragraph. There you say, "Communicability may be a problem;" right?
A. I do.
Q. And you also say, "Cigarette smoking is still a very common habit, and to offer an apparently viable alternative but with only the, quote, active, quote, ingredient may be seen as, quote, peddling the addictive ingredient, quote, against the day when smoking is banned on -- on health grounds;" right?
A. That is what is written.
Q. Sir, did you define what "addictive" meant here?
A. I was responding, as I was required to, as I recall, under the terms of this document, to a requirement to review this project in relation to its potential for B.A.T.'s business.
Q. But sir, you don't define --
MR. SHEFFLER: Are you finished?
Q. -- "addictive;" do you?
MR. SHEFFLER: Excuse me, counsel. Are you finished?
THE WITNESS: I'm finished.
Q. Move to strike as non-responsive.
Sir, you don't define "addictive" here; do you?
MR. SHEFFLER: Objection, asked and

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

answered.
A. I do not have anything to add to my earlier answer.
Q. Now you realize that if B.A.T Industries had a -- a -- a product that offered only nicotine, that you had a public-relations problem; didn't you?
A. This strategic objective section relates to the potential for the use of such a device by BATCO, and as is stated here, the sentence, cigarette smoking "may be seen as," by outside opinion.
Q. Are you done?
A. Sorry. Yes, I am.
Q. Sir, would you turn to the next page, the one that ends with Bates number 536. Do you see in the third paragraph a reference to a public-affairs concern?
A. Excuse me just a second. Let me --
I do.
Q. Now that paragraph says, "Does the offer of nicotine only, especially with an overt health, quote/unquote, bonus, permanently damn cigarette smoke, our major business? This could lead, of course, to -- to public affairs concern that an attempt to shift marginally into a new market for smokers condemns us as having dual standards. The

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

greedy tobacco barons want to kill us in a new way!"
A. I am referring in this paragraph to potential external opinion, as I was requested to do under the structure of the document. I'm trying to present to the reader of the document a perspective as to what the eventual marketing of this research-based device might mean to our business.
Q. And sir, you knew that for this project to go forward, the highest levels of approval from B.A.T Industries were necessary; right?
MR. SHEFFLER: Objection, lack of foundation.
A. My remit, as I recall, in this project, was to evaluate the proposition of a non-combustible aerosol generator against a set of criteria, and the set of criteria are "Is this project technically feasible? And if it is technically feasible, how would it perform?" and against that, the potential commercial application of this research-based idea.
Q. Move to strike as non-responsive.
My question is this, sir: You knew that for this project that you're describing in Exhibit 544 to go forward, the highest levels of approval from B.A.T Industries were necessary; didn't you, sir?
MR. SHEFFLER: Object to the form, lack of

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

foundation.
A. Can I have a few seconds to read this, please?
Q. Well sir, you say that at point four right below on this page; don't you?
A. I bring forward a potential product -- project structure and I bring forward, I believe, six criteria which would have to be addressed by the company before this project should be taken beyond even a paper stage, amongst which is point vi, a review that it is -- within a business proposition, the launch of such a project in a commercial venture would require that kind of clearance. To develop a structure here is essentially a technological challenge on a research basis.
Q. And you say, sir, "We need," and then point vi says, "High level approval within BAT Industries that it is a proposition with which BAT can live;" right?
MR. SHEFFLER: Objection, completeness -- incompleteness. I'm sorry.
A. I think I have already answered the question.
Q. Move to strike.
Sir, you say, and I quote, "We need, quote, High level approval within BAT Industries that it is a proposition with which BAT can live;" correct?
MR. SHEFFLER: Objection, asked and

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

answered two times.
A. I believe I do not have anything to add to the answer I have already given to you.
Q. Well sir, the answer you've already given is non-responsive and I move to strike it.
The question is simple, sir: You say, and I quote, "High level approval within BAT Industries that it is a proposition with which BAT can live;" correct?
MR. SHEFFLER: Objection. It's not for counsel to determine what is reponsive or what is not responsive, it's for the court, and I move to strike her comment. And I also object that this is asked and answered for three prior times.
A. I have nothing to add to what I have said previously.
Q. Sir, would you please read point vi to the ladies and gentlemen of the jury.
MR. SHEFFLER: Objection, document speaks for itself.
A. I will read point vi. "High level approval within BAT Industries that it is a proposition with which BAT can live."
Q. Now sir, you were aware at the time you made that statement that admitting nicotine was addictive

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

was a sensitive area for the tobacco industry; right?
A. I'm not aware --
MR. SHEFFLER: Object to form, lack of foundation.
Go ahead.
A. I'm not aware that there is any admission that nicotine is addictive.
Q. Well sir, let's move back. Are you saying that nicotine is not addictive?
MR. SHEFFLER: Just objection, lack of foundation. But go ahead and answer.
A. What I believe to be the case is that one needs to define "addiction" in order to categorize any material.
Q. Sir, are cigarettes addictive?
MR. SHEFFLER: Objection, lack of foundation; you haven't qualified the witness in this area. But you may answer.
A. My definition of "addiction" is one that I grew up with and is, essentially, that a substance is addictive if the user of the substance, by using it, requires greater and greater dosage over time for the effect of the substance to continue, and that in the ultimate the user may become dysfunctional, either physically or socially.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library. http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Move to strike as non-responsive.

Sir, my question is: Are cigarettes addictive?

A. By my definition, which I have just given you, which is that to be addictive a substance must be taken in increasing dosage over time to produce the effect, and that the user becomes physically or socially unable to cope, cigarettes are not addictive.

Q. Now sir, you understood -- I'm -- strike that.

It was understood within BATCO that if it were admitted that cigarettes were addictive, the company might be called upon to remove nicotine from its products; right?

MR. SHEFFLER: Objection, compound, lack of foundation.

A. Could you repeat the question, please?

Q. Certainly.

It was understood within BATCO that if it were admitted that cigarettes were addictive, the company might be called upon to remove nicotine from its products.

MR. SHEFFLER: Same objection. Also calls for speculation.

A. As an individual I have given you my description. I cannot speak for others in BATCO.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Tobacco Documents Library
http://tobaccodocuments.org/industrydocuments.ucsf.edu/docs/lhxd0001

Q. Well sir, did Dr. Ayers ever tell you that admitting that cigarettes were addictive was a problem because, if that were the case, the company might be required to remove nicotine?

MR. SHEFFLER: Object to the form.

A. I don't recall that. Could you show me any documentation?

(Plaintiffs' Exhibit 550 was marked for identification.)

BY MS. WIVELL:

Q. Sir, --

A. Could I take a little time to --

Q. Let's identify it for the record.

A. Okay.

Q. Sir, showing you what's been marked as Exhibit 550, this is a document entitled "NOTES OF A MEETING OF THE TOBACCO COMPANY RESEARCHERS DIRECTORS -- RESEARCH DIRECTORS, Imperial Head Office - 16 February 1983;" correct?

A. I have Exhibit 550, and the title, the location, and the date concur with what you have just read.

Q. Sir, the document is Bates numbered 109840698; right?

A. Sorry, is that addressed to me?

Q. Yes.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

A. Ah, yes, it is.
Q. Could you turn to the third page of the document.
MR. SHEFFLER: I object to the use of this document. There's been no foundation -- (clearing throat) excuse me -- no foundation laid that the -- the witness has any familiarity with it, nor would he, as it is a document from Imperial, another tobacco company's head office.
MS. WIVELL: Objection to the violation of the court's order.
MR. SHEFFLER: And it's not a predesignated document, so I object --
Q. Sir --
MR. SHEFFLER: Excuse me. I object on the ground that it was not predesignated for this deposition per the court's order.
MS. WIVELL: For the record, the witness asked me for a document and I gave it to him.
MR. SHEFFLER: No, he asked you about a document about Ian Ayers' communications to him. Ian Ayres and Colin Greig are not in this document. That was the question he asked. He said, "Do you have a document of a discussion between Ian Ayres and Colin Greig?" And there is no Ian Ayres and Colin Greig

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

discussion in this document.

MS. WIVELL: Well I believe the conversation was different, and the record will reflect.

Q. Sir, showing you --

MR. SHEFFLER: Well we can have the question read back.

MS. WIVELL: Well that's fine. We'll move on.

Q. Sir, showing you --

MR. SHEFFLER: Then what is the use of this document for, counsel?

MS. WIVELL: Impeachment, sir.

MR. SHEFFLER: Impeachment of what?

Q. Sir, showing you --

MR. SHEFFLER: I object.

MS. WIVELL: Fine.

MR. SHEFFLER: I object to the use of the document on the grounds that it is not proper impeachment, and no ground for impeachment has been laid.

Q. Sir, showing you what's been marked -- I'm sorry.

Turning to point five on page 700, it says there, "The role of nicotine, at the relevant lower

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

range of nicotine dosage, in perpetuating the smoking habit;" correct?

A. Can I please take some time to read this document, which I have certainly never seen before?

Q. Well sir, can you answer my question?

A. If you would give me perhaps a little time --

Q. All right. Well why don't --

A. -- to set this into context.

Q. All right.

Sir, would you please turn to the page -- the page that ends with Bates number 700. Let me repeat my question. There do you see a point five, "The role of nicotine, at the relevant lower range of nicotine dosage, in perpetuating the smoking habit?"

A. I see that that is so written.

Q. All right. And the second paragraph under that heading says, "If any future study showed that nicotine either was, or was not, associated with perpetuating the smoking habit, industry could well be called upon to reduce or eliminate nicotine from the product. (A heads we lose, tails we cannot win situation!);" correct?

MR. SHEFFLER: Objection to the form of the question and lack of foundation, improper impeachment. And also would request, for

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

completeness sake, that the first paragraph be read as well. But you may answer.

A. I read that that is what is written here, yes.

Q. Would you turn to the page that's Bates numbered 702. It shows there a list of people who received this document; right?

A. It shows a number of carbon-copy recipients, yes.

Q. And at BATCO that typically means that that's people who receive the document; right?

MR. SHEFFLER: Object to the form.

A. That would be the distribution list. Yes.

Q. Sir, isn't it a fact that Dr. Ayers shared -- shared the information about the heads-we-lose, tails-we-cannot-win situation with you?

MR. SHEFFLER: Object to the form, asked and answered.

A. Dr. Ayers was not present at this meeting, as I understand. He may have received the document, and I cannot comment upon it. And he may have formed his own conclusions therefrom, but I cannot comment because I was certainly not present at this meeting and I have not seen this document previously.

Q. Move to strike as non-responsive.

Sir, isn't it a fact that Dr. Ayers shared the

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

information about the heads-we-lose, tails-we-cannot-win situation with you?

MR. SHEFFLER: Objection, asked and answered.

A. I cannot recall any occasion when Dr. Ayers would have made such a comment, whether he did, in fact, receive this document and read it. These are matters that are beyond my ability to speak on.

Q. Well sir, it is true, isn't it, that you received from Mr. Thornton the B.A.T Industries' policy on smoking-and-health issues so that you would be aware of it; correct?

MR. SHEFFLER: Objection, lack of foundation.

A. I do not recall receiving such a policy document, but my memory could be in error.

(Plaintiffs' Exhibit 551 was marked for identification.)

BY MS. WIVELL:

Q. Sir, showing you what's been marked as Plaintiffs' Exhibit 551, this is a document you received from Ray Thornton; correct?

A. It would appear to be, yes, indeed, a document that I received from Dr. Thornton. My name is on the circulation list.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. You have no reason to believe you didn't receive it.
A. I can't recall whether or whether I did not receive it.
Q. Assuming -- I'm sorry, strike that.
The date of the document is January 17th, 1984; right?
A. It is so dated, yes.
Q. All right. And because it's short, read along with me and tell me if I've read it correctly. It's entitled "PRODUCT LIABILITY;" right?
A. It is.
Q. And sir, it says, "For your personal information, I enclose a copy of an updated guide-line on the legal considerations on smoking and health issues received from Mr. A." -- I'm sorry, "H. A. Morini, Legal Director;" right?
A. It so states, yes.
Q. And Mr. Thornton was your supervisor at the time; wasn't he, sir?
A. Mr. Thornton was the collator of information from myself and from the recipients of this document, which related in my particular case to my reviews of tobacco and tobacco smoke in the open literature.
Q. As a matter of fact, Ray Thornton had at this

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Tobacco Documents Library
http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

time a job title as being responsible for smoking-and-health issues for BATCO; didn't he?

A. I can't recall his exact title.

Q. Well sir, you had the attachment, the guidelines for legal considerations on smoking-and-health issues, at the time you wrote Exhibit 544, your March 8th, 1984 memo.

A. Could I see this updated guideline, please?

Q. You know, you -- I -- I --

MR. SHEFFLER: Objection.

MS. WIVELL: I'm going to tell him why I can't show it to him.

MR. SHEFFLER: No.

MS. WIVELL: It's -- it's been marked as privileged, sir, it's my understanding, so I can't show it to you.

MR. SHEFFLER: Well the reason why you can't show it to him, counselor, is because it is privileged, and any discussions about the document will not be permitted. I've let you go as far as I am on this -- on this area.

BY MS. WIVELL:

Q. Sir, my question is: You had the updated guideline on the legal considerations on smoking-and-health issues at the time you wrote

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Exhibit 544, your March 8th, 1984 memo; right?

MR. SHEFFLER: I'm going to caution the witness, that is a --

If you recall, you can answer that "yes" or "no."

MS. WIVELL: I object to the coaching of the witness.

MR. SHEFFLER: No, this is -- this is a delicate area. We're talking about a privileged communication. And the witness --

MS. WIVELL: I'm not asking for the subject. I have asked whether he had it in hand.

I will repeat the question.

Q. You had the updated guidelines on the legal considerations for smoking-and-health issues at the time you wrote Exhibit 544, your March 8th, 1984 memo; correct?

MR. SHEFFLER: My same instruction.

A. I was apparently -- and you cannot produce the document according to other considerations, it would appear, and I would like to be able to refer to that document. It appears that I was issued it on the 17th of January, so it must be presumed, and it would have to be a presumption, that I had it in my possession at that time, yes.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

Q. Well when you got this memo, Exhibit 551, from Mr. Thornton, did you read what was attached to it?
A. If you were able to produce the document, then I could review it and remember whether I had read it or not.
Q. Well sir, your best testimony about whether or not you would have read this document -- strike that.
If you got something from the person responsible for smoking-and-health issues and it concerned legal considerations, do you believe you probably read it?
MR. SHEFFLER: Oh, objection to the form of the question.
A. I'm presented here by you with a sheet of paper which informs me that a document was enclosed. I don't recall this document, but obviously I had received this document. In the absence of the document I'm not able to say, without reading it, whether I received it and read it or not.
Q. Well, sir, it would be fair to say, however, that you were sent Exhibit 551 before you wrote and presented your paper at the structured creativity group where you described the cigarette as a drug-administration system; right?
A. In the absence of this document and whether I read it or not, I cannot be sure.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Tobacco Documents Library
http://tobaccodocuments.org/lhxd0001

Q. Well at least Exhibit 551 is dated prior to the day you gave your paper at that structured creativity seminar; right?

A. It is so dated, yes.

MR. SHEFFLER: We've been going a little bit over an hour. Is this a convenient time to take a break? Are you moving to an area where you'd like to --

MS. WIVELL: Just a moment.

That's fine.

THE REPORTER: Off the record, please.

(Recess taken.)

BY MS. WIVELL:

Q. Sir, you have now before you what was previously marked as Exhibit 547, Bates number 109877798; right?

A. Yes, that is the number on the exhibit.

Q. Would you turn to the third page of the document.

By the way, as you're doing that, this is, again, a document that you contributed to; right?

MR. SHEFFLER: Objection, asked and answered yesterday.

A. I have a recollection of the document, yes.

Q. Now sir, would you turn, then, to the page that's Bates numbered 800. There is a discussion of

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

what was known at the time about Philip Morris Inc.; right?

MR. SHEFFLER: Objection, lack of foundation for the use of this document consistent with testimony of yesterday.

MS. WIVELL: Objection to the violation of the court's order.

MR. SHEFFLER: It's not a violation -- Well, it's not a violation of the court's order. But go ahead.

A. Can you restate the question, please?

Q. Certainly.

A. In that --

Q. At the top of page three there is a discussion of what was known at the time about Philip Morris; right?

MR. SHEFFLER: Page three?

A. I have page two, which is 109877800, is page two.

Q. It's actually the third page of the document; isn't it, sir?

A. Oh, I'm sorry. Pardon me. It's numbered as page two. But yes, --

Q. And there --

A. -- it's the third page of the document.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. -- at the top is a discussion of what was known about Philip Morris; right?

MR. SHEFFLER: Same objection, asked and answered, lack of foundation.

A. The document refers to point I., "R&D DEPARTMENTS, 1. Philip Morris Inc.," yes.

Q. And there is reference to "Knowledge Base" as point (d); right?

MR. SHEFFLER: Same objection.

A. "Knowledge Base," point (d). Yes, "Knowledge Base" is point (d).

Q. And there it says that Philip Morris is, quote, "Very strong, comma, particularly in the areas of (i) nicotine, (ii) flavours and (iii) sophisticated analytical techniques;" right?

MR. SHEFFLER: Same objection.

A. That is what is written in this document.

Q. It goes objection on to say, "The rumour is that the nicotine work has now been severely curtailed because, quote, they get frightened by their pharmacology," close quote.

MR. SHEFFLER: Same objection.

Q. Right?

MR. SHEFFLER: Can I have a continuing objection to this?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MS. WIVELL: (Nodding.)

MR. SHEFFLER: Thank you, counsel. By your nodding, I presume assent.

A. That is what is so written, yes.

Q. Now did you understand at the time that Philip Morris had curtailed -- I'm sorry, strike that.

Did you understand at the time this document was put together and written that Philip Morris had curtailed their work on nicotine pharmacology?

A. Can I clarify my position in relation to this document? My understanding of pages two and page three and pages four and page five are that they were written by -- obviously authored by Dr. Crellin, but I have no recollection of any inputs to these two, three -- five categories.

Q. Move to strike as non-responsive.

My question is a little different, sir. At the time that this document was written, did you understand that Philip Morris had severely curtailed their pharmacological work on nicotine?

A. No, I did not.

Q. Now it goes on to say here, "Probably more likely reasons relate to the nicotine addiction situation;" correct?

A. That is what is so stated.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Tobacco Documents Library
http://tobaccodocuments.ucsf.edu/docs/lhxd0001

Q. Did you understand at the time that this document was written that Philip Morris had curtailed their nicotine pharmacology work because of the -- I'm not done -- because of the problem that tobacco companies faced if they admitted that nicotine was addictive?

MR. BURTON: Object to the form of the question.

MR. SHEFFLER: I also object, lack of foundation, and compound. But you may answer.

Q. Well let me rephrase the question.

Did you understand at the time this document was written that Philip Morris had curtailed its nicotine pharmacology work because they were afraid to admit that nicotine was addictive?

MR. BURTON: I object to the form of the question.

MR. SHEFFLER: Same objection.

A. The information contained here is not my information and not my input to the document. I was unaware until reading the document that these kinds of areas had been addressed by the author. As I think I referred to yesterday, Dr. Crellin was charged under the remit of this technology review with gaining insights on thinking from 17 areas. I

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

think we stated yesterday that I gave him some input in a number of areas. This is an area where I did not give him, as I recollect, any input because I had no input to give.

Q. Move to strike as non -- the non-responsive portion.

Sir, can you turn back to Exhibit 544.

(Exhibit 544 handed to the witness.)

Q. Exhibit 544 you now have before you; right?

A. Yeah. That is your 533 reference, yeah. 544.

MR. SHEFFLER: For the record, it's 10987 --

THE WITNESS: 65.

MR. SHEFFLER: -- 6533.

Q. Now sir, this document concerned ARIEL; right?

MR. SHEFFLER: Objection, asked and answered.

A. As I read this document, it references ARIEL.

Q. Now sir, when you wrote this document, did you go back and look at the work that had been done by BATCO concerning ARIEL?

MR. SHEFFLER: Objection.

A. As I recollect, I referred to one of the ARIEL patents, and I did not consult any other literature.

Q. Did you look at any of the work when you wrote

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

this document that had been done by outside laboratories concerning ARIEL?

MR. SHEFFLER: Objection, question was asked and answered.

A. I recollect my sole reference to ARIEL was to go and consult, I think, maybe, the third patent of B.A.T.'s on ARIEL.

Q. Well sir, were you aware that the purpose of ARIEL was, in part, to give the smoker as much physiological and psycological pleasure as conventional smoking does, but to create addiction in about the same relative amounts?

MR. SHEFFLER: Objection to the form of the question. Objection, compound, assumes facts not in evidence, and foundation.

MS. WIVELL: Let me rephrase the question.

Q. Sir, were you aware when you wrote Exhibit 544 that the purpose of ARIEL, in part, was to give the smoker as much psycological and physiological pleasure as a conventional cigarette did?

A. The work on ARIEL, as I recall, was done a long time before I joined the company, and I am not aware of the statement that you have just given.

Q. Well sir, when you wrote Exhibit 544, were you aware that one of the purposes of ARIEL was to create

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

addiction in about the same relative amounts as conventional smoking did?

MR. SHEFFLER: Objection, lack of foundation as the witness just testified, asked and answered, and assumes facts not in evidence.

A. Could you restate that question, please?

Q. Yes, sir.

When you wrote Exhibit 544, were you aware that one of the purposes of ARIEL was to create addiction in about the same relative amounts as conventional smoking did?

MR. SHEFFLER: Same objections.

A. As I am aware, ARIEL was a device to produce an aerosol.

Q. Are -- are you done, sir?

A. I am done.

Q. Move to strike as non-responsive.

My question is a little different from that. Were you aware that one of the purposes that ARIEL was undertaken to do was to create addiction in about the same relative amounts as conventional cigarettes?

MR. SHEFFLER: Same objection.

A. As I stated previously, work done on ARIEL was done, as far as I am aware, prior to my joining the

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Internet Archive in 2014 http://www.industrydocuments.ucsf.edu/docs/lhxd0001

company, and whatever purpose ARIEL may have had was not revealed to me.

Q. Well sir, just so the jury understands, BATCO had files of the work that was done on ARIEL that were available so that you could review them; right?

MR. SHEFFLER: Objection to the form of the question.

A. BATCO may indeed have files on ARIEL, but I did not refer to them.

Q. Sir, showing you what's been marked as Exhibit 515, --

MR. SHEFFLER: Excuse me, counsel. Just a second.

Q. -- this is a document Bates numbered 100335808; correct?

A. It is so numbered, yes.

Q. And it is the research proposal regarding Project ARIEL; right?

MR. SHEFFLER: Objection, lack of foundation with respect -- with the use of this document with this witness.

A. Could I take a little time to look at this document, which appears to me to be undated?

Q. Well sir, --

A. I would like to know --

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. -- maybe you can answer my question --
A. -- the date.
Q. -- instead. My question is this: It is a research proposal regarding Project ARIEL; right?
MR. SHEFFLER: Are you asking him is that the title?
MS. WIVELL: Yes.
MR. SHEFFLER: Okay. Is that the title is the question.
A. That is the title as I read it.
Q. Would you turn to page -- the page that ends with Bates number 814. There is a heading "Physiological Tests;" right?
A. There is a heading "Physiological Tests," yes.
Q. And it says, quote, "The new arrangement should give as much physiological and psycological pleasure to the smoker as conventional smoking does, and it should also create addiction in about the same relative amounts." Correct?
MR. SHEFFLER: Again I object to the lack of foundation.
A. I have never seen this document previously, but that is what is stated there as the -- what should we call it? -- what is referenced under number three it should give.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. All right, sir. This document came from the files of BATCO; correct?

MR. SHEFFLER: Wait, that -- that's -- I object, that's misleading. The document came from Battelle Research, Battelle Memorial Institute.

A. I've never seen the document before, and I couldn't say where it came from.

Q. Well sir, at the bottom of the very first page of Exhibit 515 it says "BAT Co Ltd - Confidential Minnesota Tobacco Litigation;" doesn't it?

A. Does indeed.

Q. Isn't it a fact that this document was available in the files of BATCO for you -- you to review?

MR. SHEFFLER: Objection to the form.

A. I would presume that it was available within the files of BATCO.

Q. And it's your testimony to the ladies and gentlemen of the jury that you've never seen this document before?

MR. SHEFFLER: Objection, asked and answered.

A. I certainly don't recall seeing this document before.

Q. You might have, but you just can't say as you sit here today.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MR. SHEFFLER: Objection to the form.
A. I don't believe I've ever seen this document before.
Q. Well sir, you did have available for your review the ARIEL files; didn't you?
MR. SHEFFLER: Objection, asked and answered.
A. I did, as I stated earlier, review for the purposes of the non-combustible aerosol generator a patent. I was not aware that there were any ARIEL files.
Q. Did you ask anyone if there were any ARIEL files?
A. I don't recall asking anybody.
This was a project, from the date of the patents, that had gone on many years previously. It was a patent that had not been utilized. I merely referred to the patent to give me some leads as to the provision of information which might lead to this non-combustible aerosol generator.
Q. Well sir, that patent is held by Sir Charles Ellis and Mr. I. W. Hughes; isn't it?
MR. SHEFFLER: Objection, lack of foundation.
A. As far as the actual names on the patent, I

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

can't recall.
Q. Now sir, you are aware of the work that was done with regard to Project ARIEL on the subject of addiction; aren't you?
MR. SHEFFLER: Objection, asked and answered.
A. I am not aware of Project ARIEL other than the patent that I've already said I referred to in order to try and get some inkling of the potential performance of ARIEL in relation to what I was requested to do here in terms of looking for a non-combustible aerosol generator.
(Plaintiffs' Exhibit 552 was marked for identification.)
BY MS. WIVELL:
Q. Sir, showing you what has been marked as Exhibit 552, this is a document Bates numbered 536480912; correct?
A. It is 536480912, yes.
Q. And it's entitled "CONFIDENTIAL, A TENTATIVE HYPOTHESIS ON NICOTINE ADDICTION for The British-American Tobacco Co.Ltd, London, by G. Haselbach and" -- I'm sorry, "by C. Haselbach and O. Libart;" correct?
A. The "t" is indistinct, but I take the rest of

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

that, yes.

Q. Now sir, would you turn to the last page of the document. It says there, "In conclusion, a tentative hypothesis for the explanation of nicotine addiction would be that of an unconscious desire to restore the normal physiological equilibrium of the," and then I can't read the last word, "releasing system in a body in which the normal functioning of the system has been weakened by chronic intake of nicotine;" correct?

MR. SHEFFLER: It appears to be "corticotropia." But I object to the -- to the use of this document on the basis of no foundation. The date on this last page is 1963, which predates Dr. Greig.

MS. WIVELL: Objection to your coaching the witness.

MR. SHEFFLER: And I -- I object on the basis of lack of foundation, no attempt to lay foundation --

MS. WIVELL: That's fine.

MR. SHEFFLER: -- with the witness for this --

Wait a moment.

MS. WIVELL: I think the court will know

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

what your objection is.

MR. SHEFFLER: Thank you very much for interrupting me when I made my objection.

Did you get my objection, Mr. Reporter?

THE REPORTER: Yes.

MR. SHEFFLER: Thank you.

BY MS. WIVELL:

Q. Let me rephrase the question, sir. And the --

There in the last page of the document it says, "In conclusion, a tentative hypothesis for the explanation of nicotine addiction would be," and then it goes on; right?

A. It -- it then goes on, yes.

Q. Would you please read what it says at -- thereafter?

MR. SHEFFLER: Objection.

A. I've never seen this document before, but I -- and I am unfamiliar with some of the words in here. "...an unconscious desire to restore the normal physiological equilibrium of the," and I cannot, I'm afraid, read this -- I believe it might be "cortisetroyia" -- "releasing system in a body in which the normal functioning," if I can read it, "of the system has been weakened by chronic intake of nicotine."

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Now sir, when you were writing about Project ARIEL, did you review Exhibit 552?
A. I've never seen Exhibit 552 previously, no.
MS. WIVELL: Mr. Stirewalt, would you get out Exhibit 502, please.
(Exhibit 502 handed to the witness.)
BY MS. WIVELL:
Q. You have Exhibit 502 in front of you?
A. If that has a --
Yes. And a number, equivalently, of 109881322.
MR. SHEFFLER: Counsel, do you have any objection if I look over his shoulder? I don't have that exhibit.
MS. WIVELL: Not at all.
BY MS. WIVELL:
Q. Now this is a document that's headed "SECRET," and then "APPRECIATION;" right?
A. It is indeed.
Q. Now in the United States we typically don't head documents "APPRECIATION," but that is done over here in the U.K.; right?
MR. SHEFFLER: Objection.
A. I don't recall seeing "APPRECIATION" used as a heading for a document.
Q. All right, sir. Would you turn to the --

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MR. SHEFFLER: Excuse me, counsel. It -- I apologize. I don't have the document in front of me. Was this marked in this deposition?

MS. WIVELL: No, it was not.

MR. SHEFFLER: Was it marked in any deposition?

MS. WIVELL: Yes, it's Exhibit 502.

MR. SHEFFLER: Okay. Could you tell me what deposition it was marked in?

MS. WIVELL: Martin Broughton's.

MR. SHEFFLER: Thank you.

Q. Sir, showing you what's been marked as Exhibit 502, would you turn to the last page. Do you see there the heading "STRICTLY PRIVATE AND CONFIDENTIAL?"

MR. SHEFFLER: Object to the use of this document for lack --

Object to the use of the document with this witness for lack of foundation.

A. I see "DRAFT NO. 3, STRICTLY PRIVATE AND CONFIDENTIAL," yes.

Q. Then it says, "A New Company Approach to the Smoking and Health Issue;" right?

A. That's what it says.

Q. Now at the bottom it says, point three,

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

"Addiction/Habituation;" right?
A. It does.
Q. It says in part, "This is another aspect of the smoking and health issue which cannot be overlooked;" right?
MR. SHEFFLER: Continued objection to lack of foundation.
Counsel, will you give me a continuing objection on this document?
MS. WIVELL: All you have to do is say the word "objection."
MR. SHEFFLER: Okay. Objection.
A. It does indeed so state.
Q. Goes on to state, "Unlike dangerous sports and other high risk activities (except the drinking of alcohol) smoking is addictive/habituative in addition to being an additional risk and many smokers would like to give up the habit if they could." Right?
MR. SHEFFLER: Objection. Objection to lack of foundation.
A. That is what the sentence reads, yes.
Q. And sir, isn't it a fact that that is the attitude that was in effect at the time of -- during the '80s --
MR. SHEFFLER: Attitude of what?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MS. WIVELL: Excuse me. May I finish?

MR. SHEFFLER: I thought you were done.

Q. Sir, isn't it a fact that the attitude that smoking was addicting was one that was common knowledge throughout the R&D department at BATCO in the '80s?

A. I have not seen this document previously. It is not clear from this appendix whose view it is, whether it's the view of an individual or a committee or whose view it is, so I can't answer your question simply.

Q. Well, my question right now doesn't have anything to do with the document, and I'm going to move your strike -- move to strike your answer as non-responsive.

Let me rephrase it this way: Isn't it a fact that the attitude that smoking was addictive was one that was common knowledge throughout the R&D department at BATCO in the 1980s?

MR. SHEFFLER: Objection to the form.

A. I don't believe that throughout the 1980s it was common knowledge amongst scientists that smoking was addictive, however addiction is defined, and I've already given you my definition of addiction.

Q. So you're denying as you sit here today that it

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

was common knowledge at the BATCO R&D department that cigarette smoking was addictive.

MR. SHEFFLER: Asked and answered. Objection.

A. I don't believe I have anything further to add to the answer I have already given you.

Q. All right. Now sir, would you turn to the page of Exhibit 502 Bates numbered 327.

A. Which is 327?

Q. No, this document that we've just been looking at, sir.

MR. SHEFFLER: Oh, the -- the one she handed you. This one.

THE WITNESS: 502. Sorry. Yeah.

MR. SHEFFLER: Do you have any extra copies of that?

MS. WIVELL: I don't.

Q. Do you --

Could you turn to the page that's Bates numbered 327. There do you see the heading "NEW STRATEGY?"

MR. SHEFFLER: Objection, lack of foundation.

A. I see a heading labeled "NEW STRATEGY."

Q. And it says, "On balance, it is the opinion of this department that the analysis of advantages and

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

disadvantages suggests that we should now move to position B, namely, that we acknowledge, quote, the probability that smoking is harmful to a small percentage of heavy smokers," close quote; right?

A. That is what is so written, yes.

Q. And then it goes on in the next paragraph to talk about strategies to cover various aspects of the company's activities; right?

(Discussion off the stenographic record.).

MR. SHEFFLER: If you're asking what this document says, I have no objection. If you're asking him to interpret it, then I object as to lack of foundation.

MS. WIVELL: Let me rephrase the question.

Q. Then it goes on to say, "Any strategy has to cover various aspects of our activities. The main ones are basically," and then it lays out some strategies; right?

A. Can I read this, please, briefly?

Q. Let me rephrase the question so that we can move on. Goes --

It goes on to say, "Any strategy has to cover various aspects of our activities;" right?

A. It does indeed. I would now like a small pause.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MR. SHEFFLER: Let her ask the next question.

Q. Now if we go down to the bottom of the page, there is point five, "What we say when asked by government, press and others about smoking and health;" right?

A. That's what it says.

Q. And it goes on in the next page to say, "We have developed a number of possible approaches to this and they may be found as Appendices A1, A2 and A3;" right?

A. I find a reference to appendices A1, 2 and 3, but I do not find those appendices --

Q. Well sir, if you turn --

A. -- as far as I can discern at this moment.

Q. If you turn to the last page of the document, the page that ends with Bates number 335, at the top it says "APPENDIX A3;" doesn't it?

A. Oh, it does indeed, yes.

Q. And that is the document that ends with the comment that, "Unlike dangerous sports and other high risk activities (except the drinking of alcohol) smoking is addictive/habituative in addition to being an additional risk...;" right?

A. It so states.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. And it's your testimony that that statement as acknowledged here in A3 was not common knowledge in BATCO R&D department during the '80s; is that right?

MR. SHEFFLER: Objection -- objection, improper use of the document.

A. I believe I've already answered that question.

Q. And the answer to the question was no; wasn't it, sir?

A. Could I have that reread, please.

Q. I'll withdraw the question.

Sir, are you aware of -- that Dr. Russell was a consultant to BATCO?

A. I'm aware that Dr. Russell was involved with BATCO; a consultant role, I presume, would have been normal, yes.

Q. And that's Dr. M. A. H. Russell; isn't it?

A. I believe so, yes.

(Plaintiffs' Exhibit 553 was marked for identification.)

BY MS. WIVELL:

Q. Sir, showing you what's been marked as Plaintiffs' Exhibit 553, this is a document Bates numbered 105392360 as a beginning Bates number; correct?

A. Yes, 553 and 105392360, yes.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. All right. And this is a memo from Kay Comer -- I'm sorry, strike that.

The first page is a memo from Dr. Ayers to Dr. Steven J. Green; right?

A. Dr. S. J. Green.

Q. All right. And Dr. Green was at the time head of R&D for BATCO; wasn't he?

A. July '75. Yes, he -- he was the director in charge of research.

Q. And according to the first page of the document, Dr. Ayers enclosed a copy of a note by Kay Comer, who had attended a talk given by Dr. M. A. H. Russell; right?

MR. SHEFFLER: Objection on the basis of lack of foundation for the use of the document with the witness.

A. The text reads, "I enclose a copy of a note by Kay Comer, who recently attended a talk given by Dr. M. A. H. Russell," yes.

Q. And then it goes on to say, "Since the question of, quote, addiction, quote, comes up from from time to time at Chelwood, I thought you might be interested in the comments;" right?

MR. SHEFFLER: Again, same objection.

A. "Since the question of 'addiction' comes up from

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

time to time at Chelwood, I thought you might be interested in the comments" is indeed written there.

Q. All right. Now sir, Chelwood is the conference facility that's run by B.A.T Industries; right?

MR. SHEFFLER: Objection. Timeframe?

A. At the date of this document, Chelwood was the in-company conference facility run by B.A.T.

Q. All right. Now sir, Dr. M. A. H. Russell is the person that we were referring to a bit earlier as having involvement with BATCO; right?

MR. SHEFFLER: Objection to the form.

A. I never met Dr. Russell and I couldn't be sure that, at the time that this was written, what relationship he had to BATCO.

Q. Now sir, Kay Comer was involved with BATCO -- I'm sorry, strike that.

Kay Comer was a BATCO employee; right?

A. At this --

Yes, he certainly was.

Q. Would you turn to the end of the document -- I'm sorry, strike that.

Would you turn to the page of the document Bates numbered 366. Would you read the last paragraph to yourself, please.

Have you read it, sir?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

A. I have skimmed it, but I would like --
Q. All right.
A. -- a few seconds more to reread it.
Yes, I have read it.
Q. Sir, the second-to-the-last sentence -- I'm sorry, strike that.
In the second-to-the-last sentence, Ms. Comer says, "If cigarette smoking is as addictive as the evidence suggests, it is not surprising that anti-smoking campaigns are so ineffective, and moves toward the safer cigarette are the only sensible way forward." Correct?
MR. SHEFFLER: Objection to the -- to the lack of foundation for the use of this document with this witness.
A. That --
MR. SHEFFLER: Go ahead. You may answer. Go ahead.
A. That is what is written, yes.
Q. And sir, you were aware of that information; weren't you?
MR. SHEFFLER: Objection, vague.
A. What -- what -- excuse me. Aware of what information?
Q. Sir, you're aware of the information that is

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

contained in this document; aren't you?

MR. SHEFFLER: Objection, no foundation that the witness has ever seen the document.

A. I --

As far as I recall, this is the first encounter that I've had with this document.

Q. Well sir, isn't it a fact that you're aware that cigarette smoking is addictive?

MR. SHEFFLER: Objection, asked and answered repeatedly.

A. I think I've already answered that question.

Q. Well sir, isn't it a fact that you knew cigarette was addictive, and that's why, in your presentation to the structured creativity group in 1984, you ended by stating or suggesting that you should give the consumer what they wanted and then, quote, "all we would want then is a larger bag to carry the money to the bank?"

MR. SHEFFLER: Objection to the form, compound, assumes facts not in evidence.

A. Could I see the sentence, please?

Q. Certainly.

MS. WIVELL: Exhibit 328.

(Exhibit 328 handed to the witness.)

Q. Sir, there at the bottom of page 505 you say,

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

"Let us provide the exquisitness, and hope that they, our consumers, continue to remain unsatisfied. All we would want then is a larger bag to carry the money to the bank." Right?

A. This is a written transcript of a verbal presentation, as I recall, and I think it distills what I said at that verbal presentation. And I think it relates to my remit at that conference to try to stimulate an interaction between R&D and marketing. And I think that what is written there is a reflection of my desire to move the quote of Oscar Wilde into a contemporary context, and the reference to the exquisiteness there relates to smoke taste, and our consumers remaining unsatisfied refers to the possibility, as is outlined in the presentation, that we would have a better smoke-taste cigarette than our competitors and that our consumers, our consumers would remain unsatisfied with our product. And the proposition of Project RUGBY, which was the project that I was bringing to this meeting, was that it was a cheaper cigarette, cheaper to produce by virtue of using a large amount of expanded tobacco, and if that had been the case, we would have had a higher contribution and we would have needed a larger bag of money or a larger bag to carry the money to the bank.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Sir, is Project RUGBY mentioned here?
A. What is given here is a handout from the conference. I recall a verbal presentation which contained a reasonably in-depth rundown of the technical aspects of Project RUGBY.
Q. Sir, my question is a little different. Is Project RUGBY mentioned here in Exhibit 328?
I'm going to move to strike the immediately preceding answer as non-responsive.
Let me ask it again. Is Project RUGBY even mentioned in Exhibit 328?
A. Oh. It is not mentioned in Exhibit 328.
Q. What is mentioned --
MR. SHEFFLER: Wait, wait, he wasn't finished.
Q. Isn't it --
THE WITNESS: Excuse me.
MR. SHEFFLER: Don't interrupt the witness.
MS. WIVELL: I would move to strike anything he is going to say after that as non-responsive.
MR. SHEFFLER: Well you may do so after he has finished his answer, but not until.
Go ahead, doctor.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

THE WITNESS: Can you restate the question, please.

MR. SHEFFLER: Do you want --

Do you want your prior answer portion read to you so you can --

THE WITNESS: I think we are now somewhat confused. If I could have the subject --

MS. WIVELL: Is Project RUGBY --

MR. SHEFFLER: Wait, wait.

MS. WIVELL: I'll restate the question.

MR. SHEFFLER: He's asking the reporter to read back his prior partial answer so he can complete it.

MS. WIVELL: I would like the --

MR. SHEFFLER: That's his right.

MS. WIVELL: -- the question asked, too.

THE WITNESS: In the front --

MR. SHEFFLER: Wait a minute. The court reporter has to --

THE WITNESS: I'm sorry.

MR. SHEFFLER: He can't do two things at once, doctor. I'm sorry. Let the record --

Read the question, your partial answer, then you finish it.

(Record read by the court reporter.)

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MR. SHEFFLER: You started, "Oh, it is not mentioned," and then finish.

A. Can I perhaps clarify the situation?

What is mentioned on the title page of page 328 and is mentioned and one double -- on page 100503495 is "PROJECT PROPOSALS: 1. Low CO Project -- Project, 2. High Expanded Tobacco Cigarette." Now because I was involved with the project, a high expanded tobacco cigarette is what I was working on as Project RUGBY. I've already said that this is a synopsis or a distillation of a verbal presentation that I gave.

Q. Move to strike as non-responsive.

Sir, could you please point out to me the words "Project RUGBY" in Exhibit 328?

MR. SHEFFLER: Objection. He just answered that question.

A. I have not been able to find "Project RUGBY" in this synopsis. But in using the words Project RUGBY, it is synonymous with the high expanded tobacco cigarette mentioned in point two on 100503495.

Q. Now sir, despite the fact that Project RUGBY is not mentioned in this document by name, what is mentioned is the fact that a cigarette is a drug-administration system; right?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MR. SHEFFLER: Objection to the form, asked and answered.

A. It is so mentioned. And we have visited that point, and I --

Q. Now what --

MR. SHEFFLER: Wait, wait.

A. -- I would like to stand by my answers.

Q. Now --

MR. SHEFFLER: Counsel, I will request once again that when the witness pauses after saying the word "now," it will suggest that he is going to continue. Please let him gather his thoughts and continue his answer.

MS. WIVELL: Well considering that I don't read minds, it's very difficult, when he stops talking, for me to know whether or not he's done. So I'm trying my best, counsel.

MR. SHEFFLER: Okay. Well counsel, and I will -- and I understand that -- that you are. All I am suggesting is that if he is in the middle of a sentence, please let him finish.

Thank you.

BY MS. WIVELL:

Q. Now sir, one of the things that we haven't mentioned that your presentation at this conference

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

talked about was titration; right?
A. Can you direct me to such a reference, please?
Q. Oh, certainly. At page 499.
Now titration is mentioned in this document in the paragraph at the top of the page; right?
A. Can I just check that?
It is so mentioned, yes.
Q. All right. Now titration is another word for compensation; isn't it?
MR. SHEFFLER: Objection.
A. Titration in the chemical sense, and I'm a chemist, means to titrate two solutions against each other to a point of neutrality.
Q. Well that's not what you were referring to here in Exhibit 328; were you, sir?
A. You asked me how I was referring to titrate, and I attempted to define what titration was in chemical terms. If you wish to come to the context of the document, titration has another meaning. But I thought it appropriate to define in chemical terms what titration is.
Q. Okay. Well let's talk about it the way you used it here in the document, Exhibit 328. Okay? In that sense you used it as a synonym or a word meaning the same thing as compensation; right?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

A. The way in which I use titration would come about as a result of a smoker compensating his smoking practices, and thusly attain a state of neutrality.

Q. All right. And just so we're clear here, when we're talking about compensation in terms of smokers, we're talking about the fact that smokers will change, sometimes unconsciously, their smoking habit if they go to lower-nicotine cigarettes in order to obtain the same amount of nicotine that they're used to getting from their old cigarettes; right?

MR. SHEFFLER: Objection to the form, compound, assumes in evidence not in -- assumes facts not in evidence, disregards prior testimony yesterday of this issue that we've gone through at length yesterday. But you may answer if you understand the question.

If you want it read back, you can have it read back. I'm sorry my objection is --

A. I think we -- we might have it read back, please.

Q. Well let me rephrase it.

When you're talking about compensation in terms of smokers, you're talking about changes in smoker habit; right?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

A. Changes in which way a smoker will smoke a cigarette, yes.
Q. All right. And that may be conscious or unconscious on behalf of the smoker; right?
MR. SHEFFLER: Objection to the form.
A. The theory of titration was one which was very current at the time of writing this document, and much has been written about it. Many hypotheses, postulates, potential explanations were put forward.
Q. Move to strike as non-responsive.
Sir, my question has to do with whether the smoker realizes or not that he or she is compensating. Smoking compensation can be unconscious; right?
MR. SHEFFLER: Objection to counsel's statement, and that question was asked and answered responsively.
A. I believe I will stand by my answers.
Q. Move to strike as non-responsive.
Sir, smokers compensate unconsciously; don't they?
MR. SHEFFLER: Objection, asked and answered now three times.
A. I can't answer the question as to whether they do it consciously or unconsciously because I'm just

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

me, I'm one person. But what I do believe is that smokers react to smoke taste, and that if a smoker does not get sufficient in the way of mouthful of smoke or mouth sensations, then they may move to some different puffing regime.

Q. Sir, it's not just a question of puffing, it's a question of nicotine delivery; isn't it?

MR. SHEFFLER: Objection to the form.

A. No. I -- I do not think it's a question of nicotine delivery --

Q. Well --

A. -- necessarily.

Q. -- you would agree, wouldn't you, sir, that compensation exists?

A. Early studies in the area were indicating that at the time of the writing of this document there was a debate as to compensation and whether smokers compensated either by different practices with a cigarette or by smoking more cigarettes.

Q. Now, sir --

MR. SHEFFLER: Let the record reflect the document the witness was referring to was a document we've marked as Exhibit 328.

Q. Sir, in Exhibit 328 you say, "Many people will tell you authoritatively that, on sound statistical

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

analysis of well designed experiments, low tar smokers do not compensate. Rubbish. The findings are valid, but the choice of smokers probably was not." You wrote that; didn't you, sir?

MR. SHEFFLER: I object to the dramatic reading by counsel.

A. I wrote that text, yes.

MR. SHEFFLER: If we're going to a new subject, counsel, would this be an appropriate time to take our hourly break, which we're 10 minutes off?

MS. WIVELL: Well sir, we haven't been going for an hour. I would like to continue, please.

MR. SHEFFLER: It's been about an hour.

MS. WIVELL: Well I'd like to continue.

MR. SHEFFLER: Whenever you get a -- a reasonable point within the next five minutes or so, we'll -- we'll stop, because I'd like to take a break.

MS. WIVELL: Would you --

Would you please get out Exhibit 543, Mr. Stirewalt.

(Exhibit 543 handed to the witness.)

BY MS. WIVELL:

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Sir, we've previously marked Exhibit 543, Bates number 105553905; right?
A. Yes, we -- 3905. Yes, we have.
Q. Now in the first paragraph of that document it talks about compensation; doesn't it?
A. The title is "COMPENSATION...." Can I just -- can I just read --
Q. Well the title is "COMPENSATION FOR CHANGED DELIVERY;" right?
A. The title is "COMPENSATION FOR CHANGED DELIVERY," but I -- if I recall, you said in the first paragraph it talks about it, so I would like a few seconds to check that that is what is indeed referenced in the first paragraph.
Q. Fine.
A. Yeah.
Q. The first paragraph does talk about compensation; doesn't it, sir?
A. It finally arrives, at the last word, with "Compensation," yes.
Q. And it defines compensation as the process of adjusting the delivery of a brand by changing the way in which it is smoked by a smoker; right?
A. It says "...it is possible for him," and I presume her equally, "to take the same or even

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

greater weights of tar and nicotine from the lower delivery brand than from his own brand. This process" -- et cetera.

Q. And it goes on to say, "This process" -- I'm sorry, strike that.

It goes on to define compensation as the process of adjusting the delivery of a brand by changing the way in which it is smoked by a smoker; right?

A. That is the definition given here.

Q. And according to this document, compensation would allow the smoker to take greater weights of tar and nicotine from lower-delivery brands; right?

A. That is the definition given, yes.

Q. All right. And you would agree that compensation allows a smoker to get greater nicotine delivery from a lower-tar/nicotine cigarette; right?

MR. SHEFFLER: Object to the form.

A. Possible.

Q. Well you know that to be true; don't you, sir?

MR. SHEFFLER: Objection to the form.

A. It is possible --

Q. I --

A. -- that a smoker --

What is stated here is that it is possible for him to take the same things. And so yes, it is

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

possible.
Q. Well sir, you know that deliveries will rise when smokers compensate; don't you?
A. Compensation can take two forms. My opinion, it can go up, it could go down.
Q. Well sir, when you cut ventilation in a ventilated cigarette, that's one way that a smoker can compensate; right?
MR. SHEFFLER: Object to the form.
A. If one were to block or occlude ventilation holes in a ventilated cigarette, then, assuming that the poker -- smoker took the same puff volume, then the delivery would rise.
Q. And you know that that happens; don't you, sir?
MR. SHEFFLER: Objection. Overbroad.
A. It's possible for smokers to occlude ventilation holes in such a way as to cause that to happen.
MR. SHEFFLER: Counsel, we're going to take a break. I have to take a break. I'm sorry.
THE WITNESS: So do I.
THE REPORTER: Off the record, please.
(Recess taken.)
(Plaintiffs' Exhibit 554 was marked for identification.)
BY MS. WIVELL:

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Sir, showing you what's been marked as Plaintiffs' Exhibit 554, this is a document Bates numbered 102969207; right?

A. 102969207, and 554 I have, yes.

Q. Now Exhibit 554 is a -- a document that you wrote.

A. Yes, it is indeed.

Q. And it's in your handwriting; right?

A. It does not appear to be particularly legible, but yes, it is.

Q. Yeah. You wrote it in order to give information to Dr. -- or -- yeah, to Dr. David Creighton; right?

A. David Creighton.

Could I take a little time just to remind myself of what is written here?

Q. I'm not sure you answered the question.

You wrote it in order to give information to David Creighton; right?

A. It's addressed to David Creighton, so yes.

Q. All right. What's the title of the document?

A. "Actron without tears."

Q. Now Actron is a filter; isn't it?

A. Actron is a name given to a filter, yes.

Q. On Barclay cigarettes?

A. Actron has appeared on Barclay cigarettes and

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

also on other brands, as I recall.
Q. Now the Actron filter has grooves; right?
A. The Actron filter has four circumferential/ longitudinal grooves, yes.
Q. And it is possible for the smoker to cover up -- I'm sorry, strike that.
What is lip drape?
A. As I understand lip drape, and it's my -- my personal understanding, it is the occlusion or the blocking of the exit to one of those ventilation channels when the cigarette is smoked by a smoker.
Q. It's one of the ways that smokers can compensate; isn't it, sir?
MR. SHEFFLER: Objection to the form.
A. It is a way in which the ventilation system can be made less effective. And we've already referred to that in an earlier question of yours.
Q. Well just so we're clear so the ladies and gentlemen can understand, lip drape is one of the ways that a smoker consciously or unconsciously compensate; right?
MR. SHEFFLER: Objection to the form of the question, compound, asked and answered.
MS. WIVELL: Well let me rephrase the question so it's not compound.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Just so we're clear so the ladies and gentlemen can understand, lip drape is one of the ways that compensation occurs.

A. Lip drape is a way, possibly, of changing the amount of smoke that a smoker takes during a puff, yes.

Q. Do you see the portion of the Exhibit 554 on the first page that begins "In my opinion...?"

A. Yes, I do.

Q. All right. And if you go down in that sentence toward the end of the paragraph, do you see, "This acts to cut ventilation...?"

A. Excuse me, can I just read the paragraph, please?

Q. Certainly.

A. I have written -- sorry. I have read what is written.

Q. All right. Do you see the sentence that begins, "This acts to cut ventilation...?"

A. Yes.

Q. Would you read that sentence, please.

A. Excuse me. Just before (taking a drink of water), I need to --

"This acts to cut ventilation, possibly, if all four grooves are blocked, back to naught to 10

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

percent. In this circumstance delivery will rise at 35 mil puff volume, to about 7 to 8 or even higher, depending on puff number."

MR. SHEFFLER: I'd request that the next two sentences be read into the record for completeness sake.

Q. Now sir, you referred to ten -- or zero to 10 percent there; right?

A. It's possible --

MR. SHEFFLER: Objection. Go ahead.

A. I have stated -- written that if all four grooves are blocked, it is possible that ventilation falls back to naught to 10 percent.

Q. And by that figure, zero to 10 percent, you're talking about what, sir?

A. The amount of ventilating air which is entering the cigarette flow stream.

I think we perhaps, for the benefit of the jury, should remind them that the standard smoking conditions of cigarettes pertain to a volume of 35 mils of smoke taken, and that the value of ventilation in this context relates to a percentage of that 35 milliliters.

Q. And then you go on to say, "By" --

I'm sorry, is that first one "By" or "But?"

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MR. SHEFFLER: Where are you at?
A. Excuse me, where -- where?
Q. After the zero to 10 percent.
A. I think the word after that is "In."
Q. "In." All right. It's --
Then it goes on to say, "In this circumstance delivery will rise, at 35 milliliter puff volume, to about 7 or 8 or even higher, depending on puff number;" right?
MR. SHEFFLER: I again object on the grounds of completeness and would request -- and request that the court permit the next two sentences to be read to put this sentence into context.
A. Excuse me, where -- where are we now?
Q. All right. Sir, and then it goes on to say, "In this circumstance, deliverly -- deliver" -- I'm sorry, strike that.
And then it goes on to say, "In this circumstance, delivery will rise, at 35 milliliter puff volume, to about 7 or 8 or even higher, depending on puff number;" right?
MR. SHEFFLER: Same objection, same request.
A. That is what is written, yes.
Q. What are you referring to when you're talking

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

about delivery rising to seven or eight or even higher?

A. That is the delivery of particulate matter, water- and nicotine-free, PMWNF.

Q. But it includes nicotine; right?

MR. SHEFFLER: Objection.

A. It would include --

MR. SHEFFLER: He just testified that it was nicotine-free.

MS. WIVELL: I'm sorry.

MR. SHEFFLER: Mischaracterization of the -- of the testimony.

Q. Sir, are --

Is it your testimony that nicotine is not included in that figure?

A. Sorry. Let's rephrase it if we -- if we can.

This is going to be a smoke stream, so nicotine will be present. Let's re-refer to that. That the delivery will rise and that, at the 35 milliliters of puff volume, the tar delivery would be seven or eight plus associated nicotine in smoke.

Q. So a moment ago when you said that is the delivery of particulate matter, water- and nicotine-free, PMWNF, you did not mean to suggest or imply that when ventilation was cut, nicotine did not

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

rise.
A. No, I --
Q. Nicotine --
MR. SHEFFLER: Let me object to the question. Object to the form of the question as -- as compound, complex, vague and ambiguous. But --
A. If you perhaps could restate the original question, I will answer it.
Q. All right. Well I'm just very concerned because you gave an answer that said that --
A. I -- I apologize.
Q. So are you --
A. I think we -- it's come to --
MR. SHEFFLER: Let her ask the question, Dr. Greig. Don't interrupt the counsel when she asks a question.
THE WITNESS: I apologize.
MR. SHEFFLER: She won't interrpt you when you give an answer, hopefully.
Q. Now sir, when you suggested in your answer that the reference to seven or eight was to the delivery of particulate matter, you did not mean to suggest that particulate matter excluded nicotine; did you?
MR. SHEFFLER: Object to the form. Are we talking about the seven or eight number?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Object to the form.

A. I did not mean to infer when I said seven or eight, PMWNF, that there was no nicotine present in the smoke.

Q. All right. And in fact, if ventilation occurs, the delivery of nicotine will rise; won't it, sir?

MR. SHEFFLER: Objection, mischaracterizes the former testimony. I think you left out a --

MS. WIVELL: I'm sorry, let me restate the question.

Q. In fact, if blockage of ventilation occurs, the delivery of nicotine to the smoker in the puff will rise; won't it, sir?

A. This is a smoke system, so the delivery of smoke will rise and the delivery of nicotine will rise in proportion -- more or less proportion to the delivery of smoke.

Q. Now sir, at the bottom of page one of Exhibit 554 there is reference to "The third delivery-increasing possibility is common to all ventilated cigarette designs and is vent hole blocking by fingers." Have I read that correctly?

A. Can I just check that?

You have, yes, I think, read it correctly.

Q. And sir, what you're referring to is the fact

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

that smokers sometimes cover ventilation holes with their fingers when they take a puff of the cigarette; right?

A. It is possible for smokers, if they hold the cigarette while they're taking a puff, to block ventilation holes, yes.

Q. And if that occurs, then the delivery of smoke will rise; won't it, sir?

A. If they take the same puff volume, yes.

Q. And if they take the same puff volume and -- while they're covering the ventilation holes with their fingers, the delivery of nicotine will rise; won't it, sir?

A. As I have just stated, the delivery of smoke will rise and the delivery of nicotine will rise more or less directly in proportion.

Q. Now you go on in that paragraph to say, "This applies across all tip ventilated products and it is a problem for the industry, not BAT alone;" right?

A. I so state, yes.

Q. And sir, you understood that if the cigarette was made by Philip Morris or RJR or Brown & Williamson, if a smoker blocked ventilation holes while taking a puff off that cigarette, then the delivery of nicotine would rise; correct?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MR. SHEFFLER: Object to the form.

MR. BURTON: Object to the form.

A. As I replied earlier, the delivery of smoke will rise and the delivery of nicotine will rise with it, more or less in proportion, if smokers obstruct or occlude ventilation systems while taking a puff, yes, and provided that they take the same puff volume.

Q. Because they objected, I have to ask the question again and break it down.

MR. SHEFFLER: I -- I --

Q. So let me --

MR. SHEFFLER: I object. Excuse me, counsel. I object to you asking a question, getting an answer, and then reasking the same questions properly. If you want to withdraw your question when an objection is raised, the appropriate thing to do is re-ask the question at that time and not to get an answer and then decide you will have -- you will re-ask the question. So I object.

BY MS. WIVELL:

Q. Sir, if a cigarette is made by Philip Morris and the smoker covers the ventilation holes with his or her fingers, takes the same puff, the delivery of nicotine will rise in that puff; won't it, sir?

MR. BURTON: Same objection.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MR. SHEFFLER: Objection, asked and answered.

A. I think I already answered the question.

Q. Well sir, I'm entitled to an answer to the question. They objected. I restated the question.

A. Okay.

Q. Let me ask it again.

A. Can I --

Q. I'm not trying to be difficult. The court may rule that their objection is proper, so I have to ask the question again.

MR. SHEFFLER: And I object to instructing the witness, and I object to asking the question, getting the answer, and then reasking the question.

MS. WIVELL: I would like to know what rule of Minnesota evidence that objection is based on, sir.

MR. SHEFFLER: This is supposed to be a trial deposition. I don't know of any trial deposition where a question can be reformatted to the witness after the witness has answered.

MS. WIVELL: I'm sorry --

MR. SHEFFLER: Your objection --

You don't have to regard my objections as valid, you can press for an answer. But if you do regard my

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

objections as valid, the proper thing to do is re-ask the question before the witness has answered.

MS. WIVELL: I would like to know what rule says I have to do that, sir.

MR. SHEFFLER: I understood we're taking this under the general rules of -- of procedure.

MS. WIVELL: Which rule are you referring to, sir?

MR. SHEFFLER: The rule that you can --

MS. WIVELL: I would like to know.

MR. SHEFFLER: -- that you cannot ask and answer questions repeatedly on the basis of the fact that you don't like the answer or you just want to have -- hear the answer again.

MS. WIVELL: Sir, I would like to know the rule. If not, I guess you've made a spurious objection.

MR. SHEFFLER: I have not made a spurious objection. It is an objection, I stand on my objection, and it's improper to do what you did.

(Discussion off the stenographic record.)

Q. Sir, if Philip Morris made a cigarette which had ventilation holes and the smoker blocked those ventilation holes with their fingers and took the same puff volume, the increase in nicotine -- there

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

would be an increase in nicotine delivery; wouldn't there, sir?

MR. SHEFFLER: Objection, asked and answered.

MR. BURTON: Same objection.

A. I think I have already answered the question, but to restate, if you insist that I restate, all ventilated cigarettes, irrespective of the manufacturer, will, if the ventilation holes are occluded or blocked by fingers during the act of puffing, and provided that the same puff volume is applied, will show an increase in smoke delivery and a proportional increase in nicotine delivery.

Q. And that's why you said this was a problem for the industry and not for B.A.T. alone in this sentence in the last paragraph at the top of the second page of Exhibit 554.

A. Can I refresh my mind as to the date.

Yes.

Q. Now sir, one of the responsibilities that you have had while you've been at BATCO was to help take certain components of the particulate matter of smoke out of that smoke; haven't you?

A. Could you be more precise? I --

Q. Well sir, you've been involved in various

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

attempts to provide nicotine without the pyrolysis products of normal cigarettes; right?

MR. SHEFFLER: Objection, asked and answered.

A. We have already covered that ground. From my understanding, I cannot relate the answers -- I -- I --

I can't understand the question, I'm afraid. Sorry.

Q. Well let's put it this way: You're aware of attempts within BATCO to develop a safe cigarette; right?

MR. SHEFFLER: Object to the form.

A. I have heard the phrase used, yes.

Q. And the efforts to develop a safe cigarette -- I'm sorry. Strike that. You have used that -- you -- strike that.

You have heard that phrase used within BATCO; haven't you?

MR. SHEFFLER: Object to the form.

A. I have heard that phrase used within BATCO, yes.

Q. And you understand that BATCO did intend to design a safe cigarette; right?

MR. SHEFFLER: Object to the form.

A. I understand that BATCO has been in dialogue in

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

the U.K. with a number of external authorities, and that a safe cigarette was a discussion topic.

Q. It was an objective -- strike that.

Developing a safe cigarette was an objective for BATCO; wasn't it?

MR. SHEFFLER: Objection.

A. Could you show me any documentation to assist my recall, please?

Q. Certainly.

MS. WIVELL: Mr. Stirewalt, could you get out Exhibit 537.

(Exhibit 537 handed to the witness.)

BY MS. WIVELL:

Q. Sir, Exhibit 537 --

MR. SHEFFLER: Excuse me, counsel. Just --

If you don't have a copy for me, just give me a second to get it out.

MS. WIVELL: I gave you a copy yesterday, sir.

MR. SHEFFLER: That's why I'm trying to get it out.

MS. WIVELL: Well I would like to go on. Perhaps you can look on with the witness.

THE WITNESS: This is what you're looking for.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

BY MS. WIVELL:

Q. Sir, showing you what's been previously marked as Exhibit 537, this is a file note dated January -- or July 14th, 1967, concerning current chemistry research at Southampton; right?

MR. SHEFFLER: Object to the use of this witness based on witness's prior testimony, lack of foundation.

A. It is so titled, yes.

Q. Now the third paragraph starts, "Current studies on the design of, quote, safe, quote, cigarettes fall into several main approaches." Right?

A. It so states, yes.

Q. And --

A. As I recall this document was produced yesterday, and as I recall I commented then that I had never seen this document and that it predated my arrival in the company.

Q. Well sir, it goes on to talk about different types of research into a safe cigarette; right?

MR. SHEFFLER: Objection, asked and answered yesterday, and lack of foundation.

A. It --

And we're talking of paragraph three?

Q. Yes, sir.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

A. It mentions current status of -- in the -- on the design of safe, in quotes, cigarettes, and it falls into several main approaches.

Q. Now --

MR. SHEFFLER: Let the record reflect that the witness was reading from a document identified as Plaintiffs' Exhibit 537.

Q. Sir --

A. With -- with a -- the other number, 500012128.

Q. Sir, the first item that's listed under categories of research is synthetic tobacco substitutes; right?

A. It is so listed, yes.

Q. Now did you understand that research into synthetic tobacco substitutes was carried on at BATCO?

A. When I joined BATCO in 1974 I was assigned the job of looking at tobacco substitutes.

Q. And in fact you did research on a synthetic tobacco substitute called BATFLAKE; didn't you, sir?

MR. SHEFFLER: Objection, asked and answered.

A. I think we covered that area yesterday, yes.

Q. And sir, you did research which showed that BATFLAKE did decrease the biological activity of

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

cigarettes; isn't that true?

MR. SHEFFLER: Objection, lack of foundation.

A. I don't recall that. Can you assist my recollection in any way, shape or form?

Q. You -- you just don't recall any work that you did that came to that conclusion as you sit here right now?

A. I recall that during the BATFLAKE program, if I recall correctly, cigarettes containing -- and I believe not only BATFLAKE, but also two other synthetic substitutes -- my -- my recall is getting fairly distant -- was submitted to a test known as the NMFI test.

Q. And it did show that BATFLAKE reduced the activity of cigarettes in which it was incorporated.

MR. SHEFFLER: Objection to the form.

A. As measured in the test, I recall that the numbers decreased.

Q. In other words, the cigarettes that incorporated BATFLAKE had a lower number than cigarettes that did not incorporate BATFLAKE; right?

MR. SHEFFLER: Object -- objection, objection to the form. Okay.

A. Sorry, can you -- can you restate that?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Certainly.
A. Because I'm getting confused here.
Q. In other words, cigarettes that incorporated BATFLAKE had a lower number in this test than cigarettes that did not incorporate BATFLAKE.
MR. SHEFFLER: Same objection.
A. As I recall, as measured in this test, the numbers were lower. I can't remember, unless you can give me some documentation, how much lower or whatever else.
Q. Now sir, this was chemistry research that was done at Southampton that we've just been discussing in the last couple of questions and answers; right?
A. This was --
MR. SHEFFLER: Objection to the form as overbroad and vague.
A. When I joined the group, which was a small group of three people, the problems were the production of any material at all, and a large proportion of our time was spent actually managing to manufacture anything that would be robust enough to be incorporated into a cigarette.
Q. Move to strike as non-responsive.
MR. SHEFFLER: Were you finished?
Q. I'm not sure that we're not -- we're

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

communicating here.

The work that you did was chemistry research; right?

A. I tried to answer that in my -- my last answer. The vast majority of the work that was performed was obtaining a material which would hold together, which would have sufficient integrity to pass through the rest of the production process.

Q. You would agree that the work that you were doing on this synthetic tobacco substitute was in an effort to try and reduce the biological activity of the cigarettes that the BAT Group were producing; right?

MR. SHEFFLER: Objection, lack of foundation.

A. The objective that I was given when I joined the group was to produce a material, and as I recall, the stated objective was to enable B.A.T. to be able to continue to manufacture cigarettes against the world shortage of tobacco.

Q. Well sir, the second paragraph of Exhibit 537 says, "Chemistry research at Southampton is largely a development effort to produce cigarettes with reduced biological activity." Isn't it a fact that your work on BATFLAKE was part of the effort to reduce the

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

biological activity of BAT Group cigarettes?

MR. SHEFFLER: Objection, improper use of the document, lack of foundation.

A. As I have already defined, my role in production of BATFLAKE was against the remit that I understood of providing a material that would enable B.A.T. to continue to produce cigarettes should the eventuality occur that there was a world shortage of tobacco.

Now as that proceeded with considerable experimental difficulties, the production of a material was indeed achieved that was, in my own way, far from perfect in a production sense, and that material, once manufactured, was subjected to, one, biological test.

Q. Now sir, going back to the third paragraph of Exhibit 537, there are four -- three other -- strike that.

Going back to Exhibit 537, the third paragraph, in addition to synthetic tobacco substitutes, there are three other areas in which work was being done to try and design a safe cigarette; right?

MR. SHEFFLER: Objection to the form and the use of this document with the witness. There is lack of proper foundation.

A. It is stated that there are four areas

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

containing tobacco substitutes, cigarettes including a large percentage of air-cured tobacco, smoking products delivering smoke with a high nicotine-to-tar ratio, and point four, selective filtration, yes.

Q. Now sir, when you joined BATCO, you understood that work was being done in the areas that are listed in this paragraph.

MR. SHEFFLER: Objection, lack of foundation.

A. When I initially joined BATCO I was specifically assigned to the work on synthetic tobacco substitutes, and other departments were conducting those various other areas of research.

This document, in 1967, does as far as I understand it predate the situation of when I arrived in 1974. May well have been true at the time, but I can't testify to that.

Q. Well sir, isn't it a fact that you learned, the more time you spent at BATCO, that research was going on to try and develop a safer cigarette in these areas?

MR. SHEFFLER: Objection, the witness has answered that question.

A. When I --

I will rest with the answer to the previous

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

question.

(Discussion off the stenographic record.)

(Plaintiffs' Exhibit 555 was marked for identification.)

BY MS. WIVELL:

Q. Sir, showing you --

MR. SHEFFLER: Counsel, I'm sorry, but has -- okay. Never mind. Withdrawn.

Q. Sir, showing you what's been marked as Plaintiffs' Exhibit 555, this is a document Bates numbered 103152115; right?

A. It is so numbered as 555 and 103152115.

Q. Now sir, there were meetings from time to time in the research and development department at which the topics of various research projects were discussed; right?

A. I'm unaware of this document. Inasfar as I know, I've never seen it before.

Q. Sir, my question is a little bit different. There were meetings --

A. Well if I --

I presume, since I have not seen this document before, that the fact that it states that there were joint R&D/marketing meetings must mean they existed, but I'm not aware of the content of those meetings or

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by http://www.industrydocuments.ucsf.edu/docs/lhxd0001

their regularity or anything else about them.
Q. Move to strike as non-responsive.
Sir, my question was: There were meetings within the R&D department while you were in that department at which the topics of various research projects that were going on were discussed; isn't that true?
A. There were continuously project reviews being held, yes.
Q. And the various research methods that were being used to try and develop a safe cigarette were discussed at meetings that you attended; isn't that true?
MR. SHEFFLER: Objection to the form, asked and answered.
A. I do believe that I have answered that question.
Q. Well considering I have never asked it before, I would like an answer to it.
MR. SHEFFLER: Objection to the --
Q. Let me --
MR. SHEFFLER: -- statements of counsel.
Q. -- rephrase the question.
The various research methods that were being used to try and develop a safe cigarette were discussed at R&D meetings you attended; isn't that

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

true, sir?

MR. SHEFFLER: Objection to the form.

A. Project reviews in Southampton would attempt to review the progress of a project against some criteria, and if we take the instance of something like BATFLAKE, which we've already spoken, the predominant criteria in that project was to be able to produce something. Once that project had got to that particular stage, then the product could be assessed in a number of ways in a number of tests. It could not be assessed until it had been produced.

Q. Move to strike as non-responsive.

Sir, the various research methods that were being used to try and develop a safe cigarette were discussed at these continuous project reviews that you mentioned were going on; isn't that true?

MR. SHEFFLER: Objection, asked and answered.

A. I tried to the best of my ability to answer your question.

Q. And the answer is yes; isn't it, sir?

MR. SHEFFLER: Objection. The answer is what he gave.

A. The answer I will stand by. Could I have that reread, please.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

(Record read by the court reporter.)
Q. And the answer to my question is yes, the various methods for producing a safer cigarette were discussed at these continuous project reviews that you told us took place; right?
MR. SHEFFLER: Objection, asked and answered, by my count, three times, maybe more.
A. I will stand by the answer that I have already given to the question which we've just heard replayed to us.
Q. So you're refusing to answer my question, sir?
A. I don't --
MR. SHEFFLER: Objection.
Q. I just want --
MR. SHEFFLER: Argumentative.
Q. -- the jury to be clear here. Sir, are you refusing to answer my question?
MR. SHEFFLER: Objection, that's argumentative. And he has answered the question. Move on, counsel.
A. I'm not refusing to answer your question, madam. My belief is I have already answered it.
Q. And I move to strike as non-responsive.
My question doesn't have anything to do right now with BATFLAKE, sir. And let me rephrase it

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

again. I'll read it so that you can hear it again.

The answer to my question is yes, the various methods for producing a safer cigarette were discussed at these continuous project reviews that you told us took place; right?

MR. SHEFFLER: Objection, asked and answered.

A. Will you reread that to me, please? I apologize, --

Q. Yes.

A. -- but ask me again.

Q. The answer to my question is yes, the various methods for producing a safe cigarette were discussed at these continuous project reviews that you told us took place; isn't that true?

MR. SHEFFLER: Same -- same objection.

A. I don't think we're getting much further forward here.

Q. Well are you telling us that you folks had these continuous project reviews and you didn't talk about the various research methods that were being used to try and develop a safer cigarette?

MR. SHEFFLER: Objection, assumes facts not in evidence. And I believe counsel is now becoming to the point of harassing and argumentative.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

A. Let me try to clarify the issue in this particular area. An individual scientist, me, a chemist, who was working in a particular area such as BATFLAKE, was working on a continuous basis against the requirements for the project, and I have already stated that in the case of BATFLAKE, a majority of the work was about the physical formation of the product in order that, once manufactured, it could be characterized.

Now I was working at that point in a small group of people, and although I had coffee-room contact with a lot of other people in the department, I, as an individual, was not attending their individual reviews. I can only speak to my personal experience, and that my personal experience of reviews that I attended was that once a number of tests had been taken to a conclusion, then a view could be taken as to the results of those tests.

If one of those tests in a system indicated that potentially the product had some change, either in its tar or nicotine or CO or whatever it might be in the way of values, or in a biological system, then at that point a decision as to the significance of the results of those tests could be made.

Q. Well sir, you would agree, wouldn't you, that

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

the BATCO R&D had as one of its objectives marketing a commercially viable product that third parties would acknowledge as being a safer cigarette?

MR. SHEFFLER: Objection, lack of foundation.

A. I am unaware that that was a BATCO policy. Could you please show me any documentation that would show that?

(Plaintiffs' Exhibit 556 was marked for identification.)

(Discussion off the stenographic record.)

BY MS. WIVELL:

Q. Sir, showing you what's been marked as Plaintiffs' Exhibit 556, this is a document Bates numbered 109968084; right?

A. That is the Bates number, plus the Plaintiffs' number, yes.

Q. And then it says, "RESTRICTED, BCAC BRAZIL 1983, RESEARCH AND DEVELOPMENT: INNOVATION AND PRIORITIES OVER THE NEXT FIVE YEARS;" right?

A. That is what this document says, yes.

Q. At the bottom of the first page it talks about BATCO's operating group five-year plan; doesn't it?

A. This is the first time that I have ever seen this document. My recollection, I'm pretty certain

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

that I'm right, it does indeed say at that point that that is the operating group five-year plan.

Q. And it also says that it identifies three areas of major concern; right?

MR. SHEFFLER: Objection, lack of foundation for the use of this document with this witness. You may answer.

A. Excuse me, can I have -- we're -- we're on -- where --

Where are we?

Q. The bottom of the page, sir.

A. Is this headed "Smoking and Health?" Is that where -- where are we, please?

Q. Sir, you see under where it says "BAT's Technical Priorities" --

A. Okay.

Q. -- "and Innovative R&D;" right?

A. Yes, "BAT's Technical Priorities and Innovative R&D."

Q. And then under that it says, "The BATCo Operating Group five-year plan 1983-1987 identifies three areas of major concern;" right?

A. That is what is written, yes.

Q. And the first area is "Smoking and Health;" right?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

A. That is what is written, yes.
Q. And it says, "We need commercially viable products that third parties will acknowledge as having reduced biological activity and lower alleged risk to the smoker;" correct?
A. That is what it says.
Q. All right. And sir, you were in BATCO's R&D at the time that this five-year plan refers to; right?
A. I was.
Q. And you understood that one of the objectives or major areas of concern for the BATCO R&D group was to develop a commercially viable product that third parties would acknowledge as having reduced biological activity and lower alleged risk to the smoker; right?
MR. SHEFFLER: Objection to the form, lack of foundation.
A. This is the, as I stated, first time that I have seen this plan. I am certainly not consulted in the construction of the plan and --
Q. Are you done?
A. Can I just read it through, please.
MS. WIVELL: We can go off the record.
THE REPORTER: Off the record, please.
(Discussion off the record.)

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

BY MS. WIVELL:
Q. Sir, and you understood that one of the objectives or major areas of concern for BATCO R&D group was to develop a commercially viable product that third parties would acknowledge as having reduced biological activity and lower -- lower alleged risk to the smoker; right?
MR. SHEFFLER: Same objection.
A. That is what is stated here, yes.
Q. Well apart from what's stated here, you understood that that was -- was one of the major objectives for BATCO R&D.
A. It is stated here. This is the first time I have seen this document, and so --
It's a request and a requirement that that be the case.
Q. Move to strike as non-responsive.
Sir, my question has nothing to do with the document. Putting the document aside for a moment, did you understand that it was an objective of BATCO R&D to provide a commercially viable product that third parties would acknowledge as having reduced biological activity?
A. As far as I am aware, not prior to seeing this document or other documents.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library. http://www.industrydocuments.ucsf.edu/docs/lhxd0001

Q. Well sir, one of your job responsibilities was to be the designated chemistry specialist and to advise the research director and the manager of smoking and health; right?
A. That was one of my areas of responsibility.
Q. And that area of responsibility included advising the manager of smoking and health and the research director at BATCO on the implications of papers, proposals, reports and other documents; isn't that true?
A. That is true.
Q. And it's your testimony as you sit here that you did not understand that during that period when you had that job responsibility, that it was one of the objectives of BATCO R&D to provide a safer cigarette.
MR. SHEFFLER: Objection, asked and answered.
A. The distinction between what is written in there and what is written in this document, as I read it, is that there is third-party acknowledgment involved, and when I was first involved with the task of, as a chemist, reviewing the literature, I do not recall that third-party endorsement was part of the remit.
Q. All right. Well let me rephrase the question a

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

little bit differently then.

You did know during the period when your responsibilities included advising the director of R&D and the manager of smoking-and-health issues that it was an objective of BATCO's R&D department to develop a safer cigarette.

MR. SHEFFLER: Objection, mischaracterization of witness's prior answer.

THE WITNESS: Will you read my prior response, please.

(Record read by the court reporter.)

A. Your question, please?

Q. Sir, you did know during the period that your responsibilities included advising the director of R&D and the manager of smoking-and-health issues that it was an objective of BATCO's R&D department to develop a safer cigarette.

MR. SHEFFLER: Objection. I think we've already explored that ground quite extensively.

Q. Well the answer to my question is yes, you knew; isn't that true?

MR. SHEFFLER: Objection. Objection, asked and answered.

A. As I understood the situation, my job as a chemist was to report to the B.A.T. manager

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

responsible or persons responsible certain aspects of tobacco chemistry and smoke chemistry in relation to a brief along with a number of other people related to smoking-and-health issues.

(Plaintiffs' Exhibit 557 was marked for identification.)

BY MS. WIVELL:

Q. Sir, you knew during the period that you were advising the R&D manager and the smoking-and-health manager that the tobacco industry was attempting to answer the alleged hazards of smoking by reducing retained particulate matter from cigarette smoke; isn't that true?

MR. SHEFFLER: Objection to the form.

A. I was aware that the discussions with the ISCS had focussed, amongst a lot of other things, on the question of retention, yes.

Q. And sir, you knew that BATCO was attempting to create a safer cigarette by reducing the content of a particulate dose of cigarette smoke; isn't that true?

MR. SHEFFLER: Objection to the form.

A. As I recall the topic was under debate, and as I recall B.A.T.'s response to the ISCS was that it would investigate this and other areas which were of

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

concern to the ISCS.
Q. What's the ISCS, sir?
A. The Independent Scientific Committee on Smoking and health of the U.K.
Q. Well isn't it a fact that quite apart from the ISCS, that BATCO had undertaken projects to reduce the retained particulate matter in cigarette smoke?
MR. SHEFFLER: Objection.
A. I am aware that one of our aerosol scientists had made some experiments in the center in Southampton in order to try to explore this area.
Q. Is that work referred to in Exhibit 557?
A. Can I please just read through this exhibit?
Q. Counsel didn't show you this exhibit during your preparation for your deposition today?
A. Counsel did not show me this exhibit, to the best of my recollection, no.
Q. Did anyone read to -- to you from any portion of this exhibit?
MR. SHEFFLER: Objection, instruct the witness not to answer.
MS. WIVELL: On what grounds?
MR. SHEFFLER: On the grounds that what I -- what I or -- or other counsel may have read or not read to the witness is none of your business.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

It's privileged.
BY MS. WIVELL:
Q. Well sir, --
MR. SHEFFLER: Attorney-client.
Q. -- you saw --
You received Exhibit 557; right?
Do you have my question in mind, sir?
A. I have your question in mind.
Q. You received Exhibit 557; didn't you, sir?
A. As I am instructed by --
MR. SHEFFLER: Oh, I'm sorry.
THE WITNESS: I'm sorry.
MR. SHEFFLER: You can answer that question. You can answer that question.
THE WITNESS: Sorry. I thought I was still being --
MR. SHEFFLER: No.
THE WITNESS: -- instructed not to answer the question.
MR. SHEFFLER: You can answer. You can answer whether or not you received the document at or about the time it was issued.
A. I do not recall seeing this document.
Q. You're shown on the list of recipients who received copies, though; aren't you, sir?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

A. Could I take a little time to look at this document, please?
Q. Well can you answer my question, please?
MR. SHEFFLER: He's looking, counsel.
A. Yes, I -- I find my name on the bottom of the list.
Q. And finding it there, you would expect that you would have received this document at or around the time it was written; right?
A. I expect that I -- I would have done, yes.
Q. Now the subject of the document is "LOW RETENTION, Project LODOS, paren, low dose;" right?
A. That is as written at the top of the document, yes.
Q. And you -- you remember Project LODOS; don't you?
A. I remember it very, very vaguely as a name, yes.
Q. And one of the purposes of the project was to create low-tar/nicotine cigarettes that had a reduced level of particulate matter in the smoke; right?
A. With your indulgence, can I read through this to remind me of what it's all about?
Q. Fine.
MS. WIVELL: We can go off the record.
THE REPORTER: Off the record, please.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

(Discussion off the record.)

BY MS. WIVELL:

Q. Sir, you've now had the opportunity to review the first few pages of Exhibit 557; right?

A. Yes.

Q. Who was Mr. W. D. E. Irwin?

A. From the list --

MR. SHEFFLER: No, it's on the front page.

THE WITNESS: It's on the front page.

A. W. D. E. Irwin is a scientist employed in Southampton.

Q. At BATCO's Group Research & Development Center?

A. As of that date, yes, it was BATCO's Group Research & Development Center.

Q. If you turn to the second page of the document, there toward the bottom Mr. Irwin says, "The Industry has been attempting to answer the alleged hazards of smoking arguments by reducing d but has of course encountered criticisms that it is increasing...," and then it goes on; right?

A. And I -- I'm reading, "...fc and/or f subscript I (and/or number of cigarettes smoked," in parentheses, "but I ignore that)."

Q. Okay.

A. Okay. Is that --

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. That paragraph --

MR. SHEFFLER: Let the record reflect the -- the witness, when he said "but I ignore that," was reading from the document 557.

THE WITNESS: Right.

Q. The beginning of the first sentence of the third paragraph -- third-to-the-last paragraph on the second page begins, "The Industry has been attempting to answer the alleged hazards of smoking arguments by reducing d but has of course encountered criticisms that it is increasing...." Have I read it correctly so far?

A. Up to "fc," yes.

Q. All right. Now d, if we look immediately before, that he referred to in that sentence is "smoking machine particulate delivery;" right?

A. That is as I understand d, and the d above, the "smoking machine particulate delivery," yes.

Q. And --

MR. SHEFFLER: Let the -- excuse me. Let the record reflect that the document refers to d as a component of a formula, not as a subscript for a paragraph.

Q. Sir, you understood that BATCO was attempting to develop products that provided a lower smoke-machine

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

particulate delivery; right?

A. Yeah. B.A.T. had been investigating the development of products which reduced this value d --

Q. All right.

A. -- under standard smoking, as defined here, the smoking machine particulate delivery.

Q. Now sir, Project LODOS was one of those attempts; wasn't it, sir?

A. The -- what I --

What I read from this, and I -- I really don't recall this document, its content, and we haven't had a vast amount of time to study it --

I'm sorry, and I've lost my way. Could you repeat the question?

Q. All right. I will, yes.

Project LODOS was one of those projects that attempted to reduce particulate delivery; right?

A. Well as I -- excuse me. As I read the proposal here, and I think it's really a starting proposal for a project, I -- I read into this from, as I say, this -- this rather cursory glance, that d will be, as far as I'm concerned, defined, and thusly whatever methods B.A.T. had already taken to produce d -- in other words, this is smoking machine particulate delivery -- were to be further investigated by

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Tobacco Documents Library
http://tobaccodocuments.org/industrydocuments.ucsf.edu/docs/lhxd0001

Project LODOS for their -- or LODOS for the effects on retention in whatever system is to be described. And I have not yet got through to see how the test program and the other stages shall be taken through.

MS. WIVELL: Why don't we break for lunch.

THE REPORTER: Off the record, please.

(Luncheon recess taken at 12:21 o'clock p.m.)

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

AFTERNOON SESSION

(Deposition reconvened at 1:48 o'clock p.m.)

BY MS. WIVELL:

Q. Sir, before we took our lunch recess, we were talking about low-retention cigarettes. Do you recall that?

A. I recall that we were talking about low-retention cigarettes, yes.

Q. Now sir, you are aware, aren't you, that there was a problem or perceived problem in developing low-retention cigarettes because it was thought they might suggest that already-marketed cigarettes were unsafe; right?

MR. SHEFFLER: Objection to the form.

A. Can I --

MR. SHEFFLER: Excuse me one second. Off the record.

(Discussion off the stenographic record.)

Q. Let me rephrase the question since there was some problem there.

There was a problem in developing low-retention cigarettes because it was thought they might suggest that already-marketed cigarettes were unsafe; isn't that true?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Tobacco Documents Library
http://legacy.tobaccodocuments.org/lhxd0001

MR. SHEFFLER: Object to the form.
A. I -- I'm unsure that that's true. If I would be allowed a couple of minutes to see if that is in this document --
Q. Well I'm just asking you, sir: Apart from Exhibit 557, aren't you aware that there was a concern that if health claims were made for low-dose cigarettes, that it might possibly be a condemnation of already-marketed cigarettes?
MR. SHEFFLER: Object to the form.
A. I'm not aware of where you're reading that from, ma'am.
Q. Well sir, didn't you write that yourself?
A. Where are you looking at, please?
Q. Do you recall making such a statement concerning low-dose cigarettes?
A. I do not recall it.
(Plaintiffs' Exhibit 558 was marked for identification.)
BY MS. WIVELL:
Q. Sir, let me ask the question a little bit differently.
Do you recall making such a statement concerning low-retention cigarettes?
A. I don't recall, but since you've now given me

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

this document, could I have a small time to read it?
Q. Well let me identify it for the record first, please. Exhibit 558 is Bates numbered 100502694; correct?
A. That is 558. Yes, that's correct.
Q. And this is a document you wrote, sir; right?
A. It has my --
Just take a second? It has my name on the top, though it is not signed by me.
Q. Well sir, it's signed up in the upper right-hand corner.
A. Okay, that is --
Q. Isn't it?
A. That's -- well that would be an initial that I would put on most documents that I would be filing to make sure that I had a copy.
Q. So in other words, this particular copy that we have marked as Exhibit 558 is a document which you wrote and then placed in your own files at BATCO?
A. That would be the case, yes.
Q. And it's dated March 15th, 1984; isn't it, sir?
A. It is dated March the 15th, 1984.
Q. Sir, would you turn to the page that ends with Bates number -- sorry. Before you do that, the subject of this document is "LOW RETENTION;" right?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

A. It is the title of the document, yes.
Q. And it notes that low retention has been a sub -- topic of discussion for many years; right?
A. It has been a topic of discussion for many years, yes.
Q. And in fact the subject of low-retention cigarettes had been one which was earlier attempted to be commercialized; right?
MR. SHEFFLER: Objection to the form.
MS. WIVELL: That's a really bad question. Let me rephrase.
BY MS. WIVELL:
Q. BATCO had attempted to commercialize low-retention cigarettes before you wrote this memo; right?
A. As I recall, in the early 1980s a list of projects was set out, I think the number was something in the region of ten, and a desire was expressed to a number of the scientists to investigate these in relation to their potential for commercialization.
Q. Would you turn to the page that ends 698. At the top it says "STRATEGIC OBJECTIVE;" correct?
A. That is what it states.
Q. I'd like to turn your attention to the last

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

paragraph of the document. There it begins, "Legal and ethical constraints are complex;" right?

A. It so states.

Q. And then you wrote, "It might seem that there is a health connotation but, as previously, any notion of a new product benefit is a condemnation of past and existing products!" Correct?

A. That is what is so written, yes.

Q. And you ended the sentence with an exclamation point; didn't you, sir?

A. I did.

Q. Then you went on to say, "While it might be legal in the U.K. to give the, quote, message, quote, it is almost certain that our U.S. associates would be severely embarrassed by this tack;" right?

A. That is correct.

Q. And sir, isn't it a fact that low-retention cigarettes were never commercially marketed by BATCO?

A. We've already examined in Project LODOS the potential for a system which would investigate the retention of cigarettes. I am not aware that anybody has measured the retention of any cigarettes from the market or markets, so I cannot be certain that B.A.T. or any other company has or has not marketed a low-retention or a high-retention cigarette.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Sir, isn't it true that by the mid-'80s, BATCO did not have any idea of the biological activity of its marketed cigarettes?

MR. SHEFFLER: Objection, lack of foundation.

A. I am a chemist and not a biologist or whatever else would put me in a position to comment on biological activity.

Q. Well sir, isn't it a fact that despite intense research that had gone on at BATCO for over 25 years, the biological activity of the smoke from BATCO's cigarettes remained unknown as late as 1985?

MR. SHEFFLER: Objection, lack of foundation.

A. I am a chemist and I'm not qualified to make comments in the area of biological activity.

Q. Sir, isn't it true that BATCO engaged in the late '80s in a crash course to try and determine the biological activity of its marketed cigarettes?

MR. SHEFFLER: Objection, lack of foundation.

A. I am not aware of any such work.

MS. WIVELL: We're going to have to go off the record and go on the Cat II record.

THE REPORTER: Off the record, please.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

(Cat II portion begins.)
(Plaintiffs' Exhibit 560 was marked for identification.)
BY MS. WIVELL:
Q. Sir, isn't it a fact that you were involved in discussions concerning the reduced biological activity of smaller-circumference cigarettes?
MR. SHEFFLER: Objection.
A. Could I take a minute to review this document?
Q. Well my question --
A. 560.
Q. -- has nothing to do with the document, sir.
Isn't it a fact that you were involved in discussions concerning the reduced biological activity of smaller-circumference cigarettes?
MR. SHEFFLER: Objection to the form.
A. I do not remember being involved in any discussions about biological activity of reduced sidestream cigarettes in particular.
Q. Sir, my question is slightly different, and I move to strike as non-responsive. I'm not talking about sidestream smoke.
Isn't it a fact you were involved in discussions concerning the reduced biological activity of smaller-circumference cigarettes?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

A. I recall that I was involved in a discussion on the effects of reduced circumference.
Q. And sir, that discussion on the bi -- the reduced biological activity of smaller cigarettes occurred in 1987; didn't it?
MR. SHEFFLER: Objection to the form, mischaracterization.
A. According to the minute presented here, I was present at a meeting on the 20th of February 1987.
Q. And the subject of that meeting, according to Exhibit 560, was the effect of circumference reduction on biological activity; right?
MR. SHEFFLER: Objection to the form.
A. That is what is so noted at the top of the page.
Q. And sir, the minute, as you referred to it, is Exhibit 560; right?
A. As minuted, yes.
Q. That is Bates numbered 400263537; right?
A. It is so minuted, yes.
Q. Now according to what's written here, circumference reduction has reduced PMWNF or condensate-specific activity as measured by three biological tests; right?
A. That is what is so written, yes.
Q. And you took part in this discussion; didn't

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

you, sir?

MR. SHEFFLER: I object to this line of questioning. We went over this very thing yesterday and I think counsel is wasting time. These questions were asked yesterday. You went over this.

A. I note that the attendees at this meeting include Dr. E. D. Massey, who is qualified to give an opinion on such matters as specific activity and biological testing.

Q. Move to strike as non-responsive.

Sir, my question is this: You took part in the discussion that is referred to in Exhibit 560; didn't you?

A. I took part in the meeting. As a chemist by training, I was, as I recall, an observer on any discussions of biological activity.

Q. And you received a copy of this document after it was prepared; isn't that true, sir?

A. It would appear to be the case, yes.

Q. Now the three biological tests that the reduced-circumference cigarettes showed lower biological activity in were the Ames test, the mouse skin-painting, and enzyme induction test; right?

MR. SHEFFLER: Objection, lack of foundation.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

A. These are the three tests mentioned in the document, yes.

Q. Sir, isn't it true that despite the fact that Brown & Williamson -- I'm sorry. Strike that.

Isn't it true that despite the fact that BATCO knew that its reduced-circumference cigarettes had a lower biological activity, it never told the public of that fact?

MR. SHEFFLER: Objection, lack of foundation. And counsel does not need to raise her voice; we can hear perfectly well in normal conversation.

MS. WIVELL: I'm not raising my voice, sir.

MR. SHEFFLER: It certainly sounds like it to me, sitting right across the table.

MS. WIVELL: Let me repeat the question.

Q. Isn't it true that despite the fact that BATCO knew that its reduced-circumference cigarettes had a lower biological activity, it never told the public that fact?

MR. SHEFFLER: Objection, lack of foundation.

A. The tests which are mentioned here are laboratory tests, and it would in my opinion be

http://legacy.library.ucsf.edu/tid/ksm05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

necessary for B.A.T. to be sure that the results of these laboratory tests were supportable in terms of any claim. It is entirely, in my mind, possible that these tests of biological activity would, whilst indicating biological activity, possibly interact with some other cigarette-design parameters or deliveries which could alter the product in some other fashion.

Q. Move to strike as non-responsive.

My question is simple, sir: Isn't it true that despite the fact that BATCO had the information contained in Exhibit 560 that circumference reduction reduced biological tests, that it never told the public about that information?

MR. SHEFFLER: If -- excuse me, counsel. If you're going to refer to the entire document, then I believe that for completeness sake the last sentence in the paragraph where you took one sentence out of should be read to the jury.

A. On rereading the document, I find a reference --

And could I have some time to read the document, please? I did ask, I think, but you proceeded.

Q. Well sir --

A. To see what the context of the remarks you've given. Your question is specific to the first

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

sentence. I note that there is a considerable amount of documentation that my name appears in, a number of other categories, and I would like to look at the document in toto, if you would allow me to, please.

Q. Move to strike as non-responsive.

My question is simple, sir: Do you ever recall BATCO giving the public the information that reduced-circumference cigarettes showed lower biological activity?

A. I do not recall that B.A.T. made any statements at all, and I think that that is particularly emphasized in the last sentence of the first paragraph. The meeting, and I presume advised by the B.A.T. scientist Dr. Massey, specifically states that "care was required in the interpretation of any biological test or battery of tests," and this is outside the scope of the meeting. And I further suggest to you that this situation of three tests which appear to indicate reduced biological activity has given rise to a set of three pages of potential research which would be required to verify that those claims that are made that the three biological tests on their own would give B.A.T. a position to make such a claim is not substantiable. There are obviously, from this document, a number of pieces of

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

work to be done to define the complete area.
Q. Move to strike the non-responsive portion of the answer.
Sir, you didn't even remember that this meeting had taken place when we were talking about the last exhibit, Exhibit 559; did you?
MR. SHEFFLER: I object. I object that the --
There was no connection between the two exhibits, as counsel was mischaracterizing.
MS. WIVELL: I object to your violation of the court's order yet again.
MR. SHEFFLER: I've not violated the court's order.
A. My recollection of events 10 years ago may be imperfect.
Q. And sir, you did not, when you were giving testimony about Exhibit 559, even recall that this meeting had taken place; did you?
A. I --
MR. SHEFFLER: Objection, asked and answered.
A. -- do not recall, as this meeting has taken place and is minuted here.
Q. Now sir, you do recall, however, that you were

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

involved in looking at free radicals in cigarette smoke; don't you?

A. I, as a result of and as a chemist, my duties of reviewing the chemistry of tobacco and tobacco smoke, identified in the literature a number of publications which related to materials found in tobacco and smoke, and where those papers were interpretable by me as a chemist, I duly reported, as I was charged to do, the results to the group.

Q. And sir, among those things that you reported on was free radicals in tobacco smoke; right?

A. I did indeed report on free radicals in tobacco smoke.

Q. And you understood that mechanisms had been proposed to link the presence of free radicals in tobacco smoke to the development of emphysema in smokers; right?

A. As I recall -- and remember that I am a chemist -- the chemistry involved in those papers was such as to lead me to believe that it was correct. I was not in a position to comment further on the connection implied by the authors or expressed by the authors or however propounded by the authors to biological activity.

Q. But sir, you were the person who was charged by

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

the head of the research and development department of BATCO for keeping current and commenting on the literature; right?

MR. SHEFFLER: Objection. This has all been asked and answered on both days. This is very repetitive, counsel.

A. I will stand by my previous answer.

Q. Well I'm sorry, I haven't asked the question before.

MR. SHEFFLER: You have asked --

Q. So I'll ask it again.

MR. SHEFFLER: I'm sorry --

MS. WIVELL: I object to you again getting involved in this deposition. Please just say "objection."

MR. SHEFFLER: I will say objection. I will move to strike your comments to the witness, they're inappropriate. And I will repeat that I think you are needlessly filibustering, because this was all gone over yesterday as to what his -- his role was in your question.

BY MS. WIVELL:

Q. Sir, at the time that you commented on free radicals in tobacco smoke, you were the person who was charged by the head of research and development

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

for BATCO for keeping current and commenting on the literature; isn't that right?

MR. SHEFFLER: Objection.

A. I consider that I have answered the question.

Q. And the answer is yes, you were the person responsible for commenting on the literature when you --

A. I was --

Q. -- reported --

Excuse me, sir. May I finish?

MR. SHEFFLER: Let her finish her question.

Q. In answer --

MR. SHEFFLER: And she won't interrupt you either, Colin.

Q. And your answer was yes, you were the person responsible for commenting on the literature at the time that you wrote a report on free radicals in tobacco smoke. Isn't that true, sir?

MR. SHEFFLER: Objection to the form.

A. At the time of writing the report or a comment on free radicals in tobacco smoke, I was responsible for reporting, to the leader of the team of scientists, to report on the chemistry of tobacco and tobacco smoke and to select from that literature those papers which in my opinion as a chemist offered

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

valid scientific and chemical information which could be of concern to B.A.T. and would need further investigation.

Q. Now sir, at the time you made your report on free radicals in tobacco smoke, you were aware that BATCO research and development had, in the past, tried to determine free radicals in smoke condensate; correct?

A. I'm unaware of what you are referring to.

Q. You're unaware of any work --

A. I --

Q. -- that was done by Brown and -- I'm sorry, strike that.

You're unaware of any work that was done at G.R. & D.C. to identify free radicals in cigarette condensate?

MR. SHEFFLER: Objection. Timeframe? Before this report?

A. I remember having some discussions with Dr. Ian Ayres who informed me that some thinking had been done by a gentleman called Dudley Backhurst in the past. He had a professional qualification as a post-doctoral student in the study of free radicals. But I am uncertain as to whether Dr. Backhurst worked on those at B.A.T. or whether Dr. Ayers had consulted

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

him for professional advice in that area.

(Plaintiffs' Exhibit 561 was marked for identification.)

BY MS. WIVELL:

Q. Sir, showing you what's been marked as Plaintiffs' Exhibit 561, this is the report on free radicals in tobacco smoke that you were referring to earlier; isn't it?

A. Let me just take a few seconds to refresh myself about this document.

Q. Certainly.

Let me re-ask my question, sir. Plaintiffs Exhibit 561 is the report on free radicals in tobacco smoke that you were referring to a bit earlier; isn't it?

A. This is a paper which has that title, yes.

THE REPORTER: Just a moment. Let's go off the record, please.

(Recess taken.)

MS. WIVELL: All right. Just so you -- everyone knows, we have talked off the record about the fact that I may run a little over time of the 10 hours, and so I'm going to officially upgrade this B deposition to an A. But I don't expect that it will be anything more than an hour over the 10, if that.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

And counsel has agreed.

Have I stated our discussion correctly?

MR. SHEFFLER: Well you -- you told me 15 minutes. I mean we'll -- we'll obviously assess how it goes. If it's --

Dr. Greig had to get up quite early this morning to get here for this deposition, and we've been going for -- the deposition started roughly around 8:30, quarter to 9:00. We've been going fairly straight through. So I mean we'll -- we'll certainly reassess it. But if it's 15 minutes or so, we'll do everything we can to make sure we complete his deposition.

MS. WIVELL: All right.

BY MS. WIVELL:

Q. Sir, turning our attention back to Exhibit 561, you --

A. Which is -- yeah. Okay. Yeah.

Q. You --

A. Whichever it is, 100508569. Yeah.

Q. You wrote this paper after you had read an article that had been published in Science; right?

A. Yes. I identify it as -- Science is the magazine or the journal in which it is published.

Q. The paper was written by Pryor, Hayes, Premovic

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

and Church; right?

MR. SHEFFLER: I believe that's Hales.

A. Hales.

Q. I'm sorry, let me restate the question.

The paper was written by Pryor, Hales, Premovic and Church; right?

A. Those were the authors of the papers, yes.

Q. And the paper describes the identification, in relatively detailed chemical terms, of 80 percent radical present in cigarette smoke condensate; right?

A. The paper did that.

Can I just for the record say that it is the major radical, and the identification of that individual species was made and it was stated that that was 80 percent of the total radicals present in cigarette smoke.

Q. What was the major -- the major species, sir?

A. Oh, it's a fairly large molecule. The chemical structure I unfortunately do not recall.

Q. Now you went on to say that you took the view that the basic science and chemistry were sound and beyond criticism; right?

A. That was the remit that I was given.

Q. And by "remit," again, what do you mean?

A. That is the area of expertise; that is,

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

chemistry, under which I reported to Dr. Thornton on such matters.

Q. You went on to say, "...this itself is based on reasonably sound knowledge, and to some degree, also on documented evidence;" right?

MR. SHEFFLER: Excuse me, I believe you left out a section there, counselor.

A. Excuse me. Where are we, please?

Q. All right. Let me rephrase the question.

You went on to say, "...this -- this itself is based on reasonably sound knowledge, and to some degree, also on documented evidence;" correct?

MR. SHEFFLER: Objection.

A. I considered after, if I remember rightly, consulting Dr. Ian Massey, that there was in the paper some speculation on co-carcinogenicity and that that knowledge was reasonably sound, and that I could extend my views on science and chemistry to give a more complete answer, which was, as I think when we read through we will find, going to indicate that B.A.T. should take this area seriously.

Q. And in fact you go on to say, "In the context of Smoking and Health, and particularly Public Affairs, it is probable that some outside source will comment on the manufacturers' duty to remove this proven,

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

quote, nasty, quote, from smoke;" right?
A. That is indeed written.
Q. All right. Now you said, "Apart from the speculative evidence -- element, which could be criticised, we are uncomfortably close to the positive identification of a realistic source of smoking related disease...." Did I read it correctly so far?
A. You read it correctly.
Q. And then you went on to say, "...and in my opinion, we would be ill-advised to attack the scientific content of the paper;" right?
A. That was my opinion based on my assessment of the chemistry.
Q. Now sir, toward the bottom of the page there is a reference to the work that was done by Dudley Backhurst on free radicals on behalf of BATCO; correct?
A. Can I just read this section, please?
Q. Certainly.
A. Sorry. What was your question?
Q. Sir, toward the bottom of the page there is a reference to the work that was done by Dudley Backhurst on free radicals on behalf of BATCO; correct?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

A. There is indeed a reference to a joint project with Southampton University in 1967.
Q. And after that work was done in April of 1967, no further work was done on behalf of -- of BATCO on that subject; right?
A. As --
MR. SHEFFLER: Just a minute. I -- I object to the document on the basis that I -- of incompleteness. I would request that the sentence before that be read as well.
A. Could you rephrase your question, please?
Q. Certainly. After the work that -- I'm sorry, strike that.
After the work that Dudley Backhurst did in 1967, no further work was done on free radicals for BATCO; isn't that true?
MR. SHEFFLER: Same objection.
A. From the investigation that I was able to make in Southampton, that would appear to have been the case. Yes, that would appear to have been the case.
Q. And you recommended that BATCO research and development should be involved in further studies regarding free radicals; isn't that true?
A. I wrote in page two, "I am of the opinion that GR&DC should re-enter this area, and perhaps the

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

forthcoming Technical Exchange/Programme Review meeting would be an opportune arena for discussion."

Q. Sir, was additional work on free radicals undertaken by BATCO after you wrote this document?

A. I am not quite sure of the actual date, but some further work was undertaken by BATCO in Southampton.

Q. Now sir, you were also involved in work attempting to eliminate nitrosamines from cigarette smoke; right?

A. I was involved in the area of nitrosamines initially on the retirement, if I believe rightly, of Dr. Cora Ayers, another scientist in Southampton, and I took over a -- an instrumental facility which had as its priority at that point the analysis of nitrosamines.

Q. Now sir, so the ladies and gentlemen of the jury will understand, nitrosamines are present in cigarette smoke; right?

A. Nitrosamines are present at very miniscule levels in cigarette smoke. And the literature was developing relatively quickly. B.A.T. was concerned to be able -- when I joined the project, to be able to trap, to be able to separate, and to be able to analyze these very small amounts of material in tobacco smoke.

http://legacy.library.ucsf.edu/tid/ksm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Nitrosamines are carcinogenic; aren't they?
A. Nitrosamines, as I understand, are carcinogens in laboratory animals at extremely small doses in some and much larger doses in the case of others, and under the conditions of a laboratory test.
Q. Sir, there are three tobacco-specific nitrosamines present in cigarette smoke; aren't there?
A. Subsequent to my taking over supervision of the embryonic analytical facility, the presence of tobacco-specific nitrosamines, as they became called, was published in the press, and yes, indeed, there are minute amounts of those three tobacco-specific nitrosamines in tobacco smoke.
Q. Well just so we're clear here, BATCO never published its research on tobacco-specific nitrosamines in the press; did they?
MR. SHEFFLER: Object to the form.
A. As in the case of the free-radical situation that we've just been speaking of, the discovery of tobacco-specific nitrosamines, as I recall, spurred B.A.T. to come to analyze those materials.
Q. Move to strike as non-responsive.
My question is a little different, sir. BATCO never published what it knew about research that you

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

and others had done in the public literature; did it?
A. I am not aware that B.A.T. has published those observations in the open literature.
Q. Now sir, you came to the United States to discuss with -- nitrosamines with scientists there; didn't you?
MR. SHEFFLER: Object to the form.
A. I visited the American Health Foundation at the invitation of Dr. Hoffmann, as I recall.
Q. And you talked with Dr. Hoffmann about nitrosamines; didn't you, sir?
A. I talked with Dr. Hoffmann and his staff about the analytical difficulties that we were having trying to reproduce some of the data that Dr. Hoffmann had published in the open literature.
Q. Dr. Hoffmann told you that nitrosamines were the most powerful carcinogen in smoke; isn't that true?
A. Dr. Hoffmann has maintained that position.
Q. Move to strike as non-responsive.
Dr. Hoffmann told you that nitrosamines were the most powerful carcinogen in smoke; isn't that true, sir?
A. I'm unable to recall any specific statement, but my recall could be faulty. Dr. Hoffmann certainly took that position in the open literature.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

(Plaintiffs' Exhibit 562 was marked for identification.)

BY MS. WIVELL:

Q. Sir, showing you what's been marked as Plaintiffs' Exhibit 562, this is a memo that you and Dr. Baker wrote concerning a visit you made to the U.S.A. and Canada in October of 1980, right?

A. It is to titled, yes.

Q. All right. You wrote this document along with Dr. Baker; didn't you?

A. Dr. Baker and I, as I recollect, had different itineraries and saw different people. I recall that we both visited the Tobacco Chemistry Research Conference, and that we went our various ways at various times to see other suppliers or institutions.

Q. Move to strike as non-responsive.

Sir, you wrote this document with Dr. Baker; didn't you?

MR. SHEFFLER: Excuse me. Let me just note for the record that the document Bates number is 103468347.

Go ahead.

A. Yeah, the areas of joint authorship. I was trying to explain to the court, to yourself, that Dr. Baker and I joined together in certain parts of the

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

itinerary and went our separate ways on others.
Q. Move to strike the non-responsive portion of the answer.
Sir, would you turn to the page that ends with Bates number 358. That page shows that both you and Dr. Baker visited the American Health Foundation; right?
A. It says that we both visited the American Health Foundation in Val Halla, New York. Yes.
Q. And sir --
A. Could I have a brief minute to scan through what is written here?
Q. I'm only going to be referring to the first paragraph.
Sir, there it says, "Dr. Hoffmann expressed the opinion that NNK...is the most powerful carcinogen in smoke;" right?
MR. SHEFFLER: There was -- there is a little bit left out there, but I think we can agree that --
Maybe Dr. Greig could read that chemical formulation, but neither -- neither counsel opposite nor myself could. With that correction --
A. Would you so wish me to read the chemical formulation?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. All right. Well the chemical formulation for NNK is listed in the first sentence; right?
A. I would have to check its accuracy, but it looks, to my recall, pretty reasonable, yes.
Q. And NNK is one of the three tobacco-specific nitrosamines; isn't it?
A. That is one of the tobacco-specific nitrosamines, yes.
Q. And Dr. Hoffmann expressed to you his belief that NNK is the most powerful carcinogen in smoke; right?
A. He expressed that view to Dr. Baker and to myself, and I think he also expressed that view at the tobacco chemists conference.
Q. Now sir, there is no safe level of nitrosamines in cigarette smoke; is there?
MR. SHEFFLER: Objection, lack of foundation.
A. I am not a biologist, so I'm unable to comment on the safety or unsafety or whatever of any level of such a component.
MS. WIVELL: Mr. Stirewalt, could you get out Exhibit 436, please.
(Exhibit 436 handed to the witness.)
BY MS. WIVELL:

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Sir, showing you what's been marked as Exhibit 436, do you recognize the signature at the bottom of the page?

A. I do not recognize the signature at the bottom of the page, I'm afraid.

Q. Now the document is titled "Nitrosamines: A Brief Summary;" correct?

A. The document is entitled "A Brief Summary." I note that the document is not dated.

Q. Sir, the --

Directing your attention to the second-to-the-last paragraph, it states there, "There is no, quote, safe, quote, level for nitrosamines...." Do you see that?

MR. SHEFFLER: I object to the use of the document in this manner. There's been no foundation laid with this witness. And I also object on the basis of his prior testimony.

A. I think it is the --

On reading the document briefly -- could I have a little more time to --

Q. Well my question is simple. It says there, --

A. It --

Q. -- quote, "There is no 'safe' level for nitrosamines...;" doesn't it, sir?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

A. The claim is made here that there is no safe level for nitrosamines, and I would take the personal view that this is the expression or the view of whoever the somewhat squiggly signature is, until there is some more substantiation.

Q. Now sir, did BATCO ever determine the total amount of nitrosamines that a person smoking one pack a day would be exposed to over their lifetime?

MR. SHEFFLER: Objection to the form, vague.

A. I am not personally aware that this has so been done.

Q. Sir, when did you take over the lab that you referred to earlier upon the retirement of Dr. Ayers?

A. I'm unable to recall specifically. I suspect it would be sometime in 19 -- late 1970s.

Q. Sir, BATCO had known for at least 10 years prior to that that nitrosamines were present in cigarette smoke; isn't that true?

A. I recall that B.A.T. in Southampton had had a facility for the analysis of nitrosamines for some time, and that a scientist had worked in that area.

Q. Who was that scientist, sir?

A. The scientist that I remember particularly was a gentleman called Stuart Massey.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Tobacco Documents Library
http://tobaccodocuments.org/industrydocuments.ucsf.edu/docs/lhxd0001

Q. Sir, Ray Thornton had also worked in the area of nitrosamines in the '60s; hadn't he?
A. In the 1960s I was not employed by the company.
Q. Sir, --
A. So I cannot verify that.
Q. -- have you ever seen the report on nitrosamines that was done for British-American Tobacco Company by Dr. Thornton in the mid-'60s?
A. I don't recall the report.
MS. WIVELL: Mr. Stirewalt, could you get out Exhibit 228.
(Exhibit 228 handed to the witness.)
BY MS. WIVELL:
Q. Sir, showing you what's been marked as Exhibit 228, this is a document entitled "NITROSAMINES" and dated September 8th, 1965; correct?
A. It is so dated.
Q. And this is a British-American Tobacco Company report; isn't it?
MR. SHEFFLER: Do you mind if I look on with, counsel, --
MS. WIVELL: Not at all.
MR. SHEFFLER: -- since I don't have a copy of this?
A. Yes, this is, as far as I'm --

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Yes, it is dated research -- or 1965, "Research & Development Establishment."

Q. Now sir, it says here on the page that ends with Bates number 118 --

A. Yeah.

Q. -- "Four independent analytical procedures have shown nitrosamines to occur in smoke condensate...." Have I read it correctly so far?

MR. SHEFFLER: I object to the use of the document with the witness, lack of foundation.

A. It states here, "Four independent analytical procedures have been shown" -- or "have shown," more correctly, "nitrosamines to occur in smoke condensate...."

Q. Could you please read the rest of the sentence.

A. "...preliminary results suggest that the amounts may approach five micrograms per cigarette."

Q. Now sir, if we go on to the next paragraph, it says, "While, at the present time, it is difficult to determine at what level the nitrosamine delivery of a cigarette might be considered to be undesirable, the known tumourigenic activity of nitrosamines makes it difficult to justify their presence in smoke, however low their concentration." Correct?

MR. SHEFFLER: Objection to the use of the

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

document in this way.

A. That is what is written there, and presumably reflects the opinion of the author.

Q. Well sir, when you took over this lab that was doing research on nitrosamines, was the prior work that had been done on BATCO on the subject available to you for review?

A. Prior work was available.

Q. Did you --

A. But at the time that I took over the analytical laboratories, a new analytical tool called the thermal energy analyzer had become available. This particular piece of analytical equipment was specifically designed for the quantitation of nitrosocompounds, and it was logical to assume that, providing a suitable analytical work-up method could be derived to present the materials to this piece of equipment, it would be usable. There had been, as I recall, a long-term concern in Southampton that because of the extremely low levels of nitrosamine in smoke and because of the very large number of cigarettes that were required to produce sufficient nitrosamines for analysis in a relatively unsensitive analytical system, that there was a very high possibility that artifactual nitrosamine formation

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

was occurring during the whole of the smoking, the collection, and the separation process.

THE REPORTER: We have to change tape. Off the record, please.

(Discussion off the record.)

BY MS. WIVELL:

Q. Move to strike the non-responsive portion of the answer. Actually there wasn't a question pending.

Sir, did you review the earlier work that had been done at BATCO on nitrosamines when you took over the lab upon the retirement of Dr. Ayers?

A. As I recall, I took over an evolving situation with the development of this new piece of equipment. I don't recall exactly what I would have done or what I did in the way of reviewing the literature. It's now the better part of 20 years ago.

Q. Sir, to this day BATCO has never been able to remove the nitrosamines from cigarette smoke; isn't that true?

A. As far as I am aware, that has been impossible for B.A.T. or any other manufacturer to remove nitrosamines completely from tobacco smoke.

(Plaintiffs' Exhibit 563 was marked for identification.)

BY MS. WIVELL:

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Sir, showing you what's been marked as Plaintiffs' Exhibit 563, this is a report entitled "POSITION PAPER, TOBACCO SPECIFIC NITROSAMINES, OPTIONS FOR REDUCTION," dated July 19th, 1985; right?
A. That is correct.
Q. And the Bates number is 01 -- no, I'm sorry, strike that. The Bates number is 101400616; correct?
A. That is what I have here as well.
Q. And you received a copy of this document at or about the time it was written.
A. I know that -- or I notice, pardon me, that I am identified on the distribution list, and I would presume that I received this document, yes.
Q. Sir, and this document describes various attempts that were made to try and reduce nitrosamine levels in cigarette smoke; correct?
A. Could I take a little time to review?
MS. WIVELL: All right. Why don't we go off the record.
THE REPORTER: Off the record, please.
(Discussion off the record.)
BY MS. WIVELL:
Q. Sir, this document describes various attempts that were made to try and reduce nitrosamine levels in cigarette smoke; correct?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

A. This is, as far as I can see, correct, yes.
Q. Now it was also found and reported in this document that urea produced reductions in volatile nitrosamine mainstream levels, but caused an increase in mainstream TSN deliveries; right?
A. I would like some time to read it. It's --
Q. Could you turn to the page that ends with Bates number 621. There is a heading entitled "ADDITIVES TO TOBACCO;" right?
A. Four dot, "ADDITIVES TO TOBACCO," yes.
Q. And could you turn your attention to the last paragraph. Does it say there, "Urea did produce reductions in volatile nitrosamine mainstream levels but caused an increase in mainstream TSN deliveries and had no noticeable effect on sidestream yields?"
A. It does say that, yes.
Q. And TSN, that's the abbreviation for Tobacco Specific Nitrosamines; right?
A. It is the shorthand definition for Tobacco Specific Nitrosamines, yes.
Q. And you under -- I'm sorry. You understood that BATCO had done -- I'm sorry, strike that.
You understood that BATCO had research which showed that urea applied to tobacco produced an increase in tobacco-specific notrosamine delivery in

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

mainstream smoke; right?

A. I note that the sentence contains that phrase, but I also note that urea had another effect inasmuch as it reduced the volatile nitrosamine mainstream levels.

Q. Sir, I'm going to move to strike as non-responsive. My question was a little different.

You understood that BATCO had research that showed that urea applied to tobacco produced an increase in tobacco-specific notrosamine delivery in mainstream smoke; right?

MR. SHEFFLER: Objection, asked and answered.

A. I will --

Could I have the response to the last question replayed, please.

(Record read by the court reporter.)

Q. Sir, I'm not referring to the document right now. Let me rephrase the question so perhaps you can have it in mind.

At the time you received this document, you understood that BATCO had scientific studies which showed that urea did produce an increase in mainstream tobacco-specific notrosamine deliveries; isn't that true?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Tobacco Documents Library
http://legacy.tobaccodocuments.ucsf.edu/docs/lhxd0001

A. At the time of receiving this document, July 1985, I was working, as I recall, in the exploratory product development area. I had had some contact with Dr. Matkin as a professional chemist over the years that he had been working, and I suspect that I was copied into this memo for information. I do not recall specifically that I was involved with Dr. Matkin and his work during that period. I suspect that my copying in is for politeness.

I do not recall specifically that urea caused an increase in mainstream TSN levels. I would draw your attention to the fact that while that is stated here, urea also produced a reduction in volatile nitrosamine mainstream levels.

Q. Move to strike the non-responsive portion of the answer.

MS. WIVELL: Mr. Stirewalt, could you get out Exhibit 482, please.

MR. SHEFFLER: Marti, so we don't have to do this, when you use an exhibit and you don't have a copy, you don't mind; do you?

(Discussion off the stenographic record.)

(Exhibit 482 handed to the witness.)

BY MS. WIVELL:

Q. Sir, showing you what's previously been marked

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

as Exhibit 482, this is a document that is entitled "SIDESTREAM NITROSAMINE DELIVERIES FROM UREA TREATED TOBACCOS;" right?

A. The first page is illegible, but when I come through to 766, I find that this is so titled.

Q. Could you turn to the page that ends with Bates number 778. Sir, this would have been a report that was available to you in your work at BATCO in the mid-'80s; correct?

A. This -- this report entitled T155 would have been available to any scientist who wished to consult same.

Q. Now you have page 778?

A. I have page 778.

Q. There it is entitled "CONCLUSIONS AND RECOMMENDATIONS," right?

MR. SHEFFLER: I object to the use of the document with the witness, an improper foundation laid for questioning.

A. Section four -- or page four has as its heading "CONCLUSIONS AND RECOMMENDATIONS."

Q. The second paragraph reads, "It was shown in a previous report (3) that volatile -- volatile nitrosamine levels in mainstream smoke was significantly reduced, but tobacco specific

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

notrosamine mainstream levels were conversely increased;" correct?

A. It so states.

Q. Then it goes on to say, "The overall effect of the urea was to increase total nitrosamine mainstream levels;" right?

A. It does.

Q. And sir, isn't it a fact that urea is used in ammonia technology in BAT Group companies throughout the world?

A. I am not aware that it is used in BAT Group companies around the world. I am aware that urea at one time was a constituent of reconstituted tobaccos.

Q. Sir, aren't you aware from your review of World-Wide BEST that cigarette -- I'm sorry. Strike that. Aren't you aware of your -- from your review of World-Wide BEST that tobacco specific nitrosamines are increased by -- strike that. Let me rephrase the question.

Aren't you aware from your review of World-Wide BEST technology that urea is used to increase nicotine transfer efficiency by BAT Group companies?

MR. SHEFFLER: Objection, lack of foundation.

A. I cannot recall such a document.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

Q. Do you recall reviewing at Dr. Hirji's request BEST practices?
A. If you can give me some kind of a date on this document, please. I don't recall.
Q. Well do you recall in 1991 reviewing at Dr. Hirji's request ammonia technology documents?
MR. SHEFFLER: Objection, vague.
A. I don't specifically recall it, but it's possible that I was asked to scan through a document.
(Plaintiffs' Exhibit 564 was marked for identification.)
BY MS. WIVELL:
Q. Sir, showing you what's been marked as Worldwide -- I'm sorry.
Showing you what's been marked as Exhibit 564, this is a document Bates numbered 400488631; correct?
A. I note that those numbers concur with the numbers that I have on this document, yes.
Q. And sir, isn't it a fact that you were asked by Dr. Hirji to review this document in preparation for Earl Kohnhorst's presentation of BEST practices to the Tobacco Strategic Review Team?
A. I note that the Strategic Review Team is not -- it does say TSRT. I note that the schedule is dictated by the Best Practices Team.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. I'm not sure I understand, sir.

You reviewed this document in preparation for a presentation that was going to be made for the Tobacco Strategy Review Team; right?

A. I was charged, as I note the first page, to look at the documents and comment.

Q. And --

A. And I also note that the date of 18th of December and the request to report on the 6th of January coincide with the Christmas period, which in our Southampton location has a week or a 10-day shutdown, and with a number of people taking leave.

Q. Move to strike the non-responsive portion.

Sir, you're aware that the World-Wide BEST program is an attempt to try and market a product that is best in the world; right?

MR. SHEFFLER: Objection. Objection to the form.

A. As I understood the World-Wide BEST project, and I was evolved -- involved in that very peripherally, the requirement was to establish those factors which would enable B.A.T. to understand the makeup of a product which would be superior to Marlboro.

Q. And also to implement practices which would establish a product for B.A.T. that was superior to

http://legacy.library.ucsf.edu/tid/ksm05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Marlboro; right?

MR. SHEFFLER: Objection to the form.

A. I stand with my previous answer. But to reiterate, as I understood the aims of World-Wide BEST, with which I was peripherally involved, it was to know and understand the practices that would be necessary to achieve a product which would be superior to Marlboro.

Q. And one of the ways this was done was to try and figure out what Philip Morris did to make Marlboro successful; right?

A. The question which is addressed on the top of the page is "What Makes Marlboro A Marlboro?"

Q. And in fact BAT Group companies had reverse engineered Marlboro in order to answer that question; hadn't they, sir?

A. It is a moot point, I believe, what reverse engineering is. Reverse engineering is a relatively modern phrase for processes that I understand as having gone on for a very long time in all industries; in other words, investigating what it is that your competitor has which makes him different from you or unique from you, and trying to know and understand how those particular characteristics come about.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

Q. Sir, I think my question is a little bit different. The BAT Group companies had reverse engineered Marlboro in order to try and figure out why it was a good cigarette; right?

MR. SHEFFLER: Objection.

THE WITNESS: Could I have my previous answer replayed, please.

(Record read by the court reporter.)

A. In response to your question --

Could you repeat your question, please?

Q. Certainly. Sir, my question --

My question doesn't have anything to do with what reverse engineering is. My question is simply this: The BAT Group companies had reverse engineered Marlboro in order to determine why it was a good cigarette; right?

A. Excuse me, but you stated immediately before your question that your question had nothing to do with reverse engineering, yet your question appeared to have "reverse engineering" contained within it.

MR. SHEFFLER: I object to the question, belatedly, as compound.

MS. WIVELL: And I object to -- as non-responsive.

Q. Sir, the BAT Group companies had taken Marlboro

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

apart to determine its constituent parts; right?
A. The BAT Group of companies had taken, as far as I know from my limited acquaintance with World-Wide BEST, a set of Marlboro cigarettes from around the world and had analyzed those cigarettes in order to know and try to understand what components were in those cigarettes, and how, assembled together, they made a Marlboro what a Marlboro is.
Q. And sir, one of the things that the BAT Group companies learned was that Philip Morris used urea in some of its cigarettes; correct?
MR. SHEFFLER: Object to the form.
A. Could I have a look at this document, which I -- I do recall having seen; I don't recall having read in any detail.
Q. Well could you turn to page 647. There is a list, "TOBACCO BLEND CHEMISTRY SUMMARY." Urea is on that list; isn't it, sir?
A. Urea is on that list, together with about another 12 or 15 compounds.
Q. And sir, you are aware, aren't you, that urea is one of the methods that is used by BAT Group companies in production of BAT Group cigarettes; isn't that true?
A. I'm not currently aware that urea is used by

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

B.A.T. I do recall suggestions in the 1970s that it should be used, but I am not currently sure that it is used in B.A.T. materials.

Q. Now sir, you have gone back and analyzed various attempts to market low-tar or no-tar products by members of the BAT Group; correct?

A. Can you set that into some greater context for me? It doesn't appear to have any context in relation to the document I'm studying.

Q. It's not in relation to the document you have in front of you, sir.

A. Thank you.

Q. Let me repeat my question.

There came a time when you went back and analyzed various attempts to market no-tar or low-tar products by members of the BAT Group; right?

A. I'm not sure that I understand what you're referring to.

(Plaintiffs' Exhibit 565 was marked for identification.)

BY MS. WIVELL:

Q. Sir, showing you what's been marked as Plaintiffs' Exhibit 565, this is a document entitled "DISCUSSIONS ON 'NO TAR/LOW TAR' PRODUCTS;" correct?

A. I note that it is a document on discussions on

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

no-tar and low-tar products and that myself and two other B.A.T. scientists are part of the reporting team.

MR. SHEFFLER: Let the record reflect that the witness is referring to Exhibit 565. "NO TAR/LOW TAR" are in quotes.

A. And with a number which I cannot read, but could be 100288981. First digit is pretty much illegible.

Q. Sir, you were one of the authors of Exhibit 565; right?

A. I also note that the exhibit is not dated. That may be a minor point.

Q. Move to strike as non-responsive.

Sir, you're one of the authors of Exhibit 565; right?

A. Indeed, I am.

Q. And you went back and looked at the various products that are listed in this document in order to prepare it; right?

MR. SHEFFLER: Objection.

A. Can I have a little time to scan the document, please?

MS. WIVELL: We can go off the record.

THE REPORTER: Off the record, please.

(Discussion off the record.)

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Source: http://www.industrydocuments.ucsf.edu/docs/lhxd0001

MR. SHEFFLER: For the record, let me object to the use of the document since it wasn't on the predesignated or supplemental designated list.

MS. WIVELL: For the record, I also -- I want to say that we believe that this document was produced to us the day before we departed for England for the first time, and that I did provide counsel a copy of it at the beginning of the deposition yesterday.

BY MS. WIVELL:

Q. All right, sir, in order to prepare this document, you went back and looked at various products that had been -- strike that.

In order to prepare this document, sir, you went back and looked at -- at work that had been done on the various products that are listed in this chart on the first page of Exhibit 565.

A. I think that the situation is that we went and looked at no-tar and low-tar products, and that we identified these four or five boxes as representing the products that had been either launched or had been investigated.

Q. Now sir, the boxes that you referred to in your answer are in the chart at the middle of page 565.

A. The -- the document is number 565. I imagine

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

that's not the page number of the document.
Q. But the boxes that you're referring to are in the chart in the middle of the page.
A. Underneath the designation 565, yes.
Q. All right. Now they --
You put them in a -- in order beginning on the left side with Favor and on the right side with NATO; correct?
A. They are so aligned in the chart, yes.
Q. And they are aligned that way beginning with Favor, which is -- has the least biological activity; right?
A. And was having, as indicated there, the least biological activity, least tar.
Q. And as you go to the right on the chart, the products are lined up in increasing biological activity; right?
MR. SHEFFLER: Objection to the form.
A. They are lined up on the axis of retaining taste.
Q. And also on the axis of -- strike that. But --
But sir, as you go from left to right across the document, the products increase in biological activity; right?
MR. SHEFFLER: Objection to the form,

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

vague.
A. I am not sure that the biological activity would necessarily increase in the order shown.
Q. Well sir, you say immediately above the chart, "We present the spectrum of products in the diagram (below). In this diagram the products are scaled against two main areas, those of increasing/decreasing taste and biological 'activity;'" correct?
MR. SHEFFLER: No, that's not correct because it goes on to say "and of conventionalness. Those are the two main areas.
MS. WIVELL: I object, that's not what it says.
Q. Sir, --
MR. SHEFFLER: Wait.
Q. -- my question is: --
MR. SHEFFLER: The sentence -- go ahead.
Q. -- does it state above the chart, "We present the spectrum of products in a diagram (below). In this diagram the products are scaled against two main areas, those of increasing/decreasing taste and biological activity?"
MR. SHEFFLER: "And of conventionalness." And there are two axes, one for taste --

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MS. WIVELL: Excuse me, counsel.

MR. SHEFFLER: I have --

MS. WIVELL: If you have an objection, please state.

MR. SHEFFLER: I'm stating it. You are mischaracterizing and misreading the document. The document has two axes, one of conventionalness, one of biological activities and taste. Those are two axes. And the sentence makes it clear that the one axis is increasing taste and biological activity, the other axis is conventionalness.

MS. WIVELL: I object to your violation of the court's order, counsel.

MR. SHEFFLER: Excuse me. Excuse me. When you read the document without reading it in its entirety, that is objectionable, and that's my objection.

MS. WIVELL: Move to strike.

BY MS. WIVELL:

Q. Sir, above the diagram you say, quote, "We present the spectrum of products in a diagram (below). In this diagram the products are scaled against two main areas, those of increasing/decreasing taste and biological activity;" correct?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

MR. SHEFFLER: Objection.

A. I think --

MR. SHEFFLER: Incomplete.

A. I think there has been here a slip of the word processor, because I believe that conventionalness should have been included within the top area. If we take as a definition the two main areas as being those of increasing/decreasing taste and biological activity and the second area that of conventionalness, I think the context is better shown.

Q. Sir, you put them on a scale of wierd to normal; didn't you?

A. The scale of unconventionalness, and you will note that wierd is something which is extremely unconventional and, equally, normal, which is in quotes, is regarded as being the opposing direction of the vector; in other words, something more akin to a normal product.

Q. Now sir, on the left-hand side of the chart it's Favor; right?

A. On the left-hand side is identified Favor, yes.

Q. And Favor was a nicotine-delivery system that included no tobacco; right?

A. Just read this text.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

Q. Well sir, do you remember if --
A. Just checking to see --
Q. -- Favor --
A. Excuse me. Checking to see that what is written here accords with what I remember.
Q. Move to strike.
Sir --
MR. SHEFFLER: She's asking for your memory, recall.
Q. Favor was a nicotine-delivery system that included no tobacco; right?
A. As I recall, yes.
Q. And it was considered to be a drug-delivery system by the U.S. government; correct?
MR. SHEFFLER: Lack of foundation.
A. As I understand the situation, the product, which did have these severe shelf-life problems, was withdrawn under a government edict.
Q. Because it was a, quote, drug-delivery system; right?
A. I think, if I recall correctly, that that was the ground upon which whichever government department it was withdrew the system, yes.
Q. And sir, that's what you say at the bottom of your description of Favor; right?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Tobacco Documents Library
http://legacy.tobaccodocuments.ucsf.edu/docs/lhxd0001

A. That is what I understand to be the case, yes.
Q. Now the next product, moving a little to the right of Favor, that is discussed in this memo is Premier; right?
A. "Premier," as I would call it. But Premier, yeah. The two are synonymous.
Q. And Premier was launched by R. J. Reynolds as a cigarette which heats but does not burn tobacco; correct?
A. That was, as I recall, the claim made on the pack to describe Premier.
Q. And you've smoked Premier; haven't you?
A. Unfortunately, yes.
(Laughter.)
Q. Had bad taste; right?
MR. SHEFFLER: Objection, there's no one from Reynolds here to defend himself.
A. I was not impressed with the taste of Premier.
Q. Had very little nicotine response; did it?
A. It had very little of any response.
Q. You've smoked Favor, sir; haven't you?
A. I have, unfortunately, also smoked Favor.
Q. Tasted terrible; didn't it?
A. It was extremely different from what I regard as conventional cigarette-smoke taste, yes.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Had very little nicotine response; didn't it?

MR. SHEFFLER: Objection.

A. It had, on contact with the mouth, an aversive taste which to my mind would prevent most cigarette smokers from even attempting to inhale it.

Q. Now the next -- strike that.

The BAT Group attempted to develop a product that was like Premier; didn't it?

A. The B.A.T. Group investigated the area of Premier and Favor, along the lines of the diagram that we have already referred to on the first page, yes.

Q. And as a matter of fact, the BAT Group established a product -- a Project AIRBUS; right?

A. As I recollect, as I think so stated here, Brown & Williamson instigated a project called AIRBUS.

Q. And you understand that AIRBUS was eventually moved to the U.K. and that work was done under the name of NOVA; correct?

A. I don't recall when it was, the formal termination of AIRBUS, but -- some other person's recall here may be better than mine, but further work was done in Southampton on Project NOVA.

Q. Now the next box over in your diagram is GREENDOT; right?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

A. Moving towards the right-hand side of the diagram, yes.
Q. Now GREENDOT was a project that tried to develop a low-tar, low-nicotine cigarette; right?
A. The original brief given in GREENDOT was that a product should be produced with one milligram of tar and one milligram of nicotine.
Q. And you report in Exhibit 565 that a large amount of work was done by a small team between 1988 and '90; right?
A. I report that, yes.
Q. And that work was successful in attaining all the objectives, but not in one product; right?
A. As I recall, the amount of work done did indicate that one milligram of tar, one milligram nicotine, and lowest possible biological activity could be attained.
Q. And in fact, biological activity was so low as to be on the threshold of detectability; right?
A. As I recall, as measured by the Ames test, the biological activity was so low as to be on the threshold of detectability, yes.
Q. Now the next project that's referred to in your diagram is Project WARSAW; right?
A. Indeed, Project WARSAW, yes.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. What was Project WARSAW?
A. Project WARSAW was intended to explore, as I recollect, the extent to which modification of a tobacco-based product could move towards the original GREENDOT option.
Q. Now the project ceased, according to your memo; right?
A. It was, as I recall, terminated in 19 -- what was the date? -- 1990.
Q. At the time the project was terminated, the project showed considerable reduced biological activity with sufficient tobacco taste and nicotine delivery; right?
A. As I recall that was the case. Reduction in biological activity had been achieved to some degree, and some tobacco taste and nicotine had been demonstrated.
Q. Well sir, you didn't use the word "some," you used the words "sufficient tobacco taste and nicotine delivery;" didn't you?
A. The phrase that is written here is "sufficient," but in my own personal recollection the tobacco taste was sufficient to identify it as tobacco, but it would not be of a nature to give me any personal particular satisfaction. It was indubitably a

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

tobacco taste, but it was not a good tobacco taste.
Q. Now the last box that is discussed on your chart is NATO, and NATO stands for Nearly All Tobacco Option; right?
A. NATO stood for Nearly All Tobacco Option.
Q. Now it says here, "By stretching conventional technologies to the limit a number of extremely modified products were produced;" right?
A. It so states, yes.
Q. And these products were marketed in Germany; right?
A. No.
Q. I'm sorry. These products were tested in Germany; right?
A. It states that three products, four milligrams each, were consumer tested in Germany versus market products with very favorable results.
Q. But project NATO was terminated, too; wasn't it, sir?
A. As far as I am aware, it ceased.
Q. In fact, sir, all of the work on these projects, Favor, Premier, GREENDOT, WARSAW, and NATO, ceased as of approximately 1990; right?
A. I recall that some of the work on NATO, if I recall correctly, even perhaps lasted another six or

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

nine months beyond 1990.
Q. And sir, isn't it true that at that time funding for these various projects was terminated?
MR. SHEFFLER: Objection, lack of foundation, and vague.
A. The situation in 1990 was, as I recall, that project group which had been working on AIRBUS and GREENDOT was split up and that the staff moved in to various other responsibilities in a new R&D structure in Southampton.
Q. And work on AIRBUS and GREENDOT was terminated; wasn't it, sir?
A. Work on those projects ceased when those scientists and workers moved to new areas of responsibility in 1990.
Q. Has there been any work since on producing a safer cigarette?
MR. SHEFFLER: Objection, assumes facts not in evidence, mischaracterization of the former testimony.
A. To my recollection, since that date products in this particular area have not been investigated in Southampton.
Q. Are you aware of any work that has been done on products that had a reduced biological activity since

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

the work on the projects that are listed in Exhibit 565 was terminated?

MR. SHEFFLER: Objection. I need to consult with local counsel before I can let the witness answer.

THE REPORTER: Off the record, please.

(Discussion off the record.)

MR. SHEFFLER: I must request at this point that if -- if the question as phrased is pressed, we have to go to Category II. Not anticipating any answer, but I -- it may result in a disclosure of trade-secret information. So --

MS. WIVELL: All right. Well then let's go on the Cat II record and we'll proceed.

THE REPORTER: Off the record, please.

(Category II portion resumes.)

(Plaintiffs' Exhibit 568 was marked for identification.)

BY MS. WIVELL:

Q. Sir, showing you what's been marked as Plaintiffs' Exhibit 568, this is "A REVIEW OF FACTORS INFLUENCING TAR" -- I'm sorry, "NICOTINE/TAR RATIO IN MAINSTREAM SMOKE;" right?

A. I so have 4004, I think, 93381.

Q. Sir, the "REVIEW OF FACTORS INFLUENCING

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

NICOTINE/TAR RATIO IN MAINSTREAM SMOKE" was a report that you authored; right?

A. I note from the title that it was co-authored with P. C. Bevan and W. D. E. Irwin.

Q. It says "ISSUED BY: R. R. Baker;" right?

A. It states "ISSUED BY: R. R. Baker," yes.

Q. What does that mean, "ISSUED BY: R. R. Baker?"

A. Within the BATCO R&D center the procedure for report writing is that the authors or author of a report would prepare a draft which would be reviewed and the issuer of the report, and in certain cases peer-group reviewers, to make their comments. The report would then proceed to such a point as a first issue, which would be reviewed and critiqued by the issuer. And then if the issuer were satisfied as to the contents of the report and the quality of the work, he would so issue the report.

Q. Now did that description that you have just made also apply when research and development was under British-American Tobacco Company?

MR. SHEFFLER: Objection. Let me just for the record state Exhibit 568 is an incomplete version of this document. Pages 12 through 33 appear to be missing from this version that was made available for plaintiffs at Guildford depository.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf Digitized by the Legacy Industry Documents Library http://legacyindustrydocuments.ucsf.edu/docs/lhxd0001

I'm sorry, you can --
A. Could you repeat the question as you've asked it, please?
Q. Yes. Did the description that you have just given also apply to the process in place when research and development was under BATCO?
A. The process under BATCO and the process under B.A.T (U.K. & Export) were essentially similar. As I recall, the peer review may or may not have been present in all reports.
Q. Now sir, this report was done in response to a request from a 1986 research conference in Sydney that a compilation be made of BAT Group knowledge of factors influencing the tar/nicotine ratio of cigarettes; right?
A. Could I take a little time, perhaps, just to scan the summary page.
Q. Certainly.
MR. SHEFFLER: While he's scanning, let me correct my objection. According to the -- what's on my screen, it says documents made available to counsel. The complete version of what we've marked as 568 was made available to counsel. Counsel had selected and -- and used today an incomplete version of the same document.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. Sir, let me repeat my question.

This report was done in response to a request from a 1986 research conference that a compilation be made of BAT Group knowledge of factors influencing the tar/nicotine ratio of cigarettes; right?

A. I note on reading the summary that there is a sentence or a paragraph which indicates that this report -- it's presumably a draft -- was written and circulated to other R&D centers in the BAT Group, Australia, Brazil, Canada, Germany and the U.S.A., and that -- and the next sentence, "These R&D Centres then added additional information, so that this final version is an amalgamation of all BAT Group information."

Q. And if we go on, the next paragraph says, "Responding to a request from the 1986 Research Conference in Sydney, this literature review compiles BAT Group knowledge of factors influencing the tar/nicotine" -- I'm sorry -- "the nicotine/tar ratio of cigarettes, plus evidence of consumer acceptability of modified NTR experimental products and brand launches;" right?

A. That is, as I read it, what is so stated in the second paragraph.

Q. Now if you turn to the page that ends with Bates

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

number 385, we see that there are a summary of five main factors that have the greatest scope of interest for increasing nicotine/tar ratios; right?

A. I see under the section denoted "Answer," that there are five main factors so denoted.

Q. And sir, you understood after you had finished the review and writing of this document that one factor that was used to increase tar/nicotine ratios was the blend nicotine level; right?

MR. SHEFFLER: Objection to the form.

A. I am not aware and I certainly don't recall that I saw this in the final form. I'm not sure whether the draft that we wrote in Southampton was added to by Dr. Baker, and whether any of the numerical values which are contained in this have been modified.

Q. Move to strike as non-responsive.

Sir, as you were writing this document, you learned that blend nicotine level was one method for increasing nicotine/tar ratios; right?

MR. SHEFFLER: Objection to the form.

A. The teaching of this document in respect of blend nicotines is that changing the blend nicotine over a range from naught to five percent experimentally can increase the nicotine-to-tar ratio. And I note that it adds that commercial

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

blends do not generally exceed three percent blend nicotine.

Q. Now sir, the other -- I'm sorry. Strike that.

The other main factors for increasing tar-to-nicotine ratio which are listed here are ventilation, ammonia treatment, alkaline filters, and shredded stem; right?

A. I note that factors two to five are indeed as stated, ventilation, ammonia treatment, alkaline filters, and shredded stem.

Q. Now sir, you knew also that another method to manipulate nicotine delivery was available through the use of filters; right?

MR. SHEFFLER: Objection to the form, mischaracterization of the witness's previous testimony.

A. Could you clarify for me, please, what you mean in your statement "filters?"

(Plaintiffs' Exhibit 569 was marked for identification.)

BY MS. WIVELL:

Q. Sir, showing you what's been marked as Plaintiffs' Exhibit 569, this is a document you wrote entitled "NICOTINE ADDICTION" -- I'm sorry, strike that.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Showing you what's been marked as Exhibit 569, this is a document you wrote entitled "NICOTINE ADDITION TO SMOKE FROM FILTERS;" right?

A. I note that the document is numbered 569, it also has the number 570350969, and that its title is "NICOTINE ADDITION TO SMOKE FROM FILTERS."

Q. You wrote it; didn't you, sir?

A. My name appears on the title, yes.

Q. And there's an abstract on the first page; correct?

A. I note an abstract on the first page. Would you give me a little time to read this abstract?

Q. Well sir, directing your attention to the last sentence, you stated there, "Thus another means of manipulating nicotine delivery and tar:nicotine ratios is available beyond blend and cigarette design manipulations;" correct?

MR. SHEFFLER: Objection. Objection to form. First of all, this wasn't on the list of designated documents. Secondly, I object; if the witness wants to read the brief paragraph, I think he should be entitled to read it.

MS. WIVELL: Well I object to your misstatement.

MR. SHEFFLER: If you want to read the

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

brief abstract, I believe the witness should be entitled to read it.

A. I have read the brief abstract. I note from the brief abstract that this paper describes some experiments in which nicotine is added or bonded to filter materials from which it can be released into smoke when this -- and implicit in "this" is smoke -- contacts the filter.

Q. And sir, it says there, "Thus another means of manipulating nicotine delivery and tar:nicotine ratios is available beyond blend and cigarette design manipulations;" correct?

A. It does so state.

Q. And it describes work that you did in which you added a Favor nicotine source element to a tobacco rod; right?

A. If you'd allow me a little time to scan through what is written here.

Q. Do you have my question in mind, sir?

A. I'm afraid that I would ask you to repeat it, please.

Q. Yes, sir.

And this document describes work that you did in which you added a Favor nicotine source element to a tobacco rod; right?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

A. It contains, amongst many other things and observations, a description of the addition of a Favor filter element -- (clearing throat) pardon me -- to a tobacco rod.

Q. And sir, if we turn to the page that ends with Bates number 977, there is a slide depicting the increase in nicotine milligrams per puff when that Favor system was added as a filter to the tobacco rod; correct?

MR. SHEFFLER: Objection, lack of foundation.

A. It shows the result of an experiment, as I recall, in which a flavor element of different lengths was added -- a Favor element was added to an existing filter.

Q. Now sir, the subject of aerosols from filters was one that BATCO investigated through researchers at the University of Minnesota; isn't that true?

MR. SHEFFLER: Objection to the form.

A. I am unaware that -- personally unaware that B.A.T. investigated that particular area.

Q. Well sir, you are personally aware of the fact that scientists from the University of Minnesota involved in aerosol research were funded by BATCO; isn't that true?

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

MR. SHEFFLER: Objection.
A. I'm not --
MR. SHEFFLER: Go ahead.
A. I don't recall that that is the case or has been the case.
Q. Well do you recall a visit made by researchers from the University of Minnesota to the R&D laboratories at Southampton?
A. I don't recall a visit, but --
(Plaintiffs' Exhibit 570 was marked for identification.)
BY MS. WIVELL:
Q. Sir, showing you what's been marked as 570, this is a document Bates numbered 100516676; correct?
A. I agree that those numbers are on this sheet, yes.
Q. And sir, this exhibit is shown -- I'm sorry, strike that.
You received a copy of this exhibit; didn't you?
A. I am on the circulation list. Yes.
Q. There's a check next to your name indicating that this is actually your copy; right?
A. I believe, from what I know of the general secretarial practices in Southampton, that that check is put against the person to be circulated.

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Q. And this letter invites researchers from the University of Minnesota to come to Southampton to discuss aerosol research; right?
A. As I read the document, the Professor Liu is invited to visit our R&D laboratories for technical discussions on areas of mutual interest.
Q. Sir, did you attend the meeting that's referred to in this document?
A. I don't recall attending the meeting.
MR. SHEFFLER: Object -- well --
Q. Do you recall --
A. I didn't even know a meeting eventually took place.
Q. Sir, you received results of work done at the University of Minnesota on aerosols; didn't you?
MR. SHEFFLER: Objection to the form.
A. I cannot recall receiving those or any materials from the University of Minnesota.
Q. Did you ever visit the University of Minnesota?
A. I have to my knowledge never visited the University of Minnesota.
Q. So if Dr. Liu from the university came to Southampton, you're just unaware of it; is that right?
A. I cannot recall whether he ever came to

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

Southampton.
Q. Do you recall ever getting any research results from the University of Minnesota on aerosols?
MR. SHEFFLER: Object to the form, asked and answered.
A. I do not personally remember receiving any materials on aerosols from the University of Minnesota.
Q. Sir, do you agree that cigarettes are -- today are Star Wars-like objects?
MR. SHEFFLER: Object to the form.
A. I presume that they could be described as such.
Q. Have you ever seen a description of cigarettes -- of modern cigarettes being described as Star Wars-like objects?
A. I can't recall such a description.
MS. WIVELL: I'd like to go on the Cat II record.
THE REPORTER: Off the record, please.
(Cat II portion resumes.)
MS. WIVELL: I have no further questions.
MR. SHEFFLER: Well Your Honor, I'm sorry we wasted so much of your time here, but I think we will take our afternoon break as we had talked about at this point, we'll coalesce, and see if we have any

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

questions to ask. I want to review my notes from this afternoon.

We'll be right back with you in five or so minutes, maybe 10 minutes.

THE COURT: All right.

THE REPORTER: Off the record, please.

(Discussion off the record.)

MR. SHEFFLER: BATCO and BATUKE have no questions at this time.

MS. WIVELL: We'd ask the witness to read and sign.

THE REPORTER: Off the record, please.

(Deposition concluded at 5:50 o'clock p.m.)

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

C E R T I F I C A T E

I, Richard G. Stirewalt, hereby certify that I am qualified as a verbatim shorthand reporter; that I took in stenographic shorthand the testimony of COLIN C. GREIG at the time and place aforesaid; and that the foregoing transcript consisting of pages 243 through 435 is a true and correct, full and complete transcription of said shorthand notes, to the best of my ability.

Dated at London, England, this 29th day of July, 1997.

RICHARD G. STIREWALT
Registered Professional Reporter
Notary Public

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001

C E R T I F I C A T E

I, COLIN C. GREIG, the deponent, hereby certify that I have read the foregoing transcript consisting of pages 243 through 435, and that said transcript is a true and correct, full and complete transcription of my deposition except:

COLIN C. GREIG
Deponent

Sworn and subscribed to before me this day of , 1997.

Notary Public

My commission expires .

http://legacy.library.ucsf.edu/tid/ksn05a00/pdf
Digitized by the Legacy Industry Documents Library - http://industrydocuments.ucsf.edu/docs/lhxd0001